PL12-0207

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Wetlands Site Assessment: Dike District 12 Levee Certification (PL12 – 02079KAGIT COUNTY

Prepared for:

Skagit County Dike, Drainage and Irrigation District 12 C/O John Semrau, PE, PLS Semrau Engineering and Surveying, PLLC 2118 Riverside Drive, Suite 208 Mount Vernon, WA 98273-5454



Prepared by:

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November 8, 2012

Table of Contents

Section	page
Summary	ii
1. Introduction	1
2. Existing Condition	1
3. Existing Information	3
3.1 National Wetland Inventory	3
3.2 Soil Survey of Skagit County	3
3.3 Priority Habitats and Species Data Base	4
4. Project Description	5
5. Site Investigation	5
5.1 Wetland Definition	5
5.2 Wetland Parameters	5
5.2.1 Wetland Hydrology	5
5.2.2 Hydric Soils	- 6
5.2.3 Hydrophytic Vegetation	6
5.3 Data Collection	6
5.4 Gages Slough	6
5.5 Side Channel and Skagit River	6
5.6 Isolated Wetland and Wetland Mosaic	7
5.7 Wetland Ratings and Functions	10
6. Regulatory Analysis	10
6.1 Riparian Buffers	11
6.1.1 Skagit River	11
6.1.2 Gages Slough	11
6.2 Wetland Buffers	11
6.2.1 Wetland A	11
6.2.2 Wetland B	12
6.3 Buffer Width Averaging	12
7. Summary and Conclusion	13
8. Closure	13
9. References	14

Attachments

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A	Vicinity Map
B	Wetland Determination Data Forms
С	Wetland Delineation Site Plan
D	Wetland Rating Forms
E	Buffer Averaging Site Plan

i

Summary	
<u>Applicant</u> :	Skagit County Dike, Drainage and Irrigation District 12 C/O John Semrau Semrau Engineering and Surveying, PLLC 2118 Riverside Drive, Suite 208 Mount Vernon, WA 98273-5454
<u>Site</u> :	The project area is located along the right bank of the Skagit River extending from Lafayette Road in the north to Gardner Road in the south within Section 4, Township 34 North Range 4 East and Section 33 Township 35 North, Range 4 East, W.M., Skagit County, Washington.
Areas Assessed:	Gages Slough: Type F (Fish Habitat) Skagit River and Side Channel: Type S (Shoreline) Category IV Wetland Category I Wetland
<u>Project</u> :	The subject proposal is to enlarge both the width and height of the existing Skagit River levee along the entire 1.53 mile project site. The project extends from the Burlington city limits at Gardner Road north to the Terminus of the Burlington Northern Santa Fe Railroad on Lafayette Road in the north. The top of levee will be extended approximately 4 feet in height and the toe width will be increased approximately 60 feet landward of the existing toe. Construction will occur on top and landward of the existing levee.
Critical Area Impact:	Proposed expansion has been designed to "avoid" critical area impacts by expanding in a landward direction (landward) from the existing levee. Category IV Wetland (Wetland A) of 2,954 square feet will be filled as a result of project related activities. Buffer of Category I wetland (Wetland B) will be reduced by 0.58 acres.
Regulatory Guidance:	Skagit County Critical Areas Ordinance (SCC 14.24) SCC 14.24.520 Fish and Wildlife Site Assessment Requirements SCC 14.24.220 Wetland Site Assessment Requirements SCC 14.26 Shoreline Management Master Program
Recommendations:	Fill associated with Wetland A should be addressed through jurisdictional substitution pursuant to SCC 14.24.040 (3).
	Buffer averaging pursuant to SCC 14.24. 240 (2) should be utilized to decrease the standard buffer for Wetland B in areas of cleared pasture landward of the existing levee while increasing the buffer in a mixed forest canopy waterward of the levee.



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1. Introduction

At the request of Mr. John Semrau, Graham-Bunting Associates (GBA) have conducted a site investigation and prepared the following assessment addressing regulated wetlands relative to levee modifications being proposed by Dike District 12. The report includes a characterization of existing conditions, project description, review of existing resource data sources, a summary of our investigative procedures and findings, wetland rating and mitigation recommendations consistent with Section 14.24.230 of the Skagit County Critical Areas Ordinance (CAO). The report also considers fish and wildlife habitat conservation areas as addressed under Section 14.24.500 of the CAO. In light of federal and state review conducted by the U.S. Army Corps of Engineers, U.S. Fish and Wildlife and National Marine Fisheries Services and the Washington State Departments of Fish and Wildlife and Ecology, species and habitat review has been satisfied through jurisdictional substitution under Subsection 14.24.040 (3) of the CAO.

2. Existing Conditions

The project area is located along the right bank of the Skagit River extending from Lafayette Road in the north to Gardner Road in the south within Section 4, Township 34 North Range 4 East and Section 33 Township 35 North, Range 4 East, W.M., Skagit County, Washington.





Skagit County GIS: i-Map (2012)

The project site consists of the existing right bank levee of the Skagit River, farmland landward of the levee and a mix of uplands and wetlands waterward of the levee. The levee is managed and maintained by Skagit County Dike, Drainage and Irrigation District Number 12. The levee ranges from approximately 8 to 12 feet in height (measured from toe to top) and 80 feet in width (measured toe to toe). The centerline of the levee is located approximately 100 from the river at

its closest point in the north and approximately 1,100 feet from the river at its furthest point in the south. The project site includes five distinct aquatic features listed below from north to south:

- 1. Gages Slough Gages Slough is located along the northern portion of the site and is separated from the project site by Lafayette Road. The slough receives its hydrologic charge from a culvert leading from the north end of a forested wetland at Hart Island and is seasonally flooded from October through May. The portion of the slough adjacent to the project site is vegetated with a thicket of scrub shrub and tree species dominated by willow (Salix spp.) and alder (Alnus rubra).
- 2. Side Channel of Skagit River The existing levee extends from Layfayette Road east to a side channel of the Skagit River. The side channel floods discharging to the mainstem Skagit during high flows. The bottom of the channel is vegetated with a vigorous community of water pepper (*Polygonum hydropiperoides*). The landward bank and area between the channel and Skagit River itself consists of a deciduous forest dominated by cottonwood (*Populus halsamifera*), willow, and alder.
- 3. Skagit River The Skagit River extends from the side channel south to Gardner Road and exhibits natural and armored banks. The armored banks include areas which are vegetated with Himalayan blackberry (*Rubus discolor*) willow and Japanese knotweed (*Polygonum cuspidatum*) which is subject to eradication as an invasive species. Areas of natural banks, along the southern portion of the project site exhibit plant communities similar to those described in conjunction with the description of the side channel (above).
- 4. Isolated Wetland A small linear wetland resembling a ditch segment is located landward (west) of the toe of the existing levee in a field utilized historically as a source of fill material for levee construction and maintenance. (Note: Use of the term "isolated" throughout this report is not intended to suggest a jurisdictional determination)
- 5. Wetland Mosaic The area between the existing levee and the Skagit River consists of a mix of uplands and wetlands characterized as a wetland mosaic. Uplands are dominated by reed canarygrass (*Phalaris arundinacea*), meadow fescue (*Festuca pratensis*), alder and mitigation plantings consisting of conifers and deciduous trees including western red cedar (*Thuja plicata*), shore pine (*Pinus contorta*), Douglas fir (*Pseudotsuga menziesii*), and big leaf maple (*Acer macrophyllum*). Wetlands are dominated by willow, alder, reed canarygrass, water pepper and hard-stemmed bulrush (*Scirpus acutus*).

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Photo 1 – View southwest showing dry side channel of Skagit River. Note downed logs in channel and three strata plant community.



Photo 2 - View northeast showing armored bank in foreground and forested side channel (pictured in photo 1) in background.

3. Existing Information

The subject property has been addressed under a number of existing studies. The relevant information sources have been reviewed and synthesized to assist GBA in characterizing the subject property. The sources are summarized as follows:

<u>3.1 National Wetland Inventory</u> - The National Wetland Inventory (NWI) is compiled by the U.S. Department of Interior's Fish and Wildlife Service. NWI relies upon visual aerial photo interpretation of wetland indicators including hydrologic, vegetation and topographic signatures. Wetland areas identified under NWI are also classified in accordance with the Cowardin classification system which characterizes wetlands, in part, through hydrologic regime, vegetation type and location within the landscape. The following wetlands are identified and classified within the project area:

- Gages Slough is identified as a palustrine forested seasonally flooded (PFOC) wetland
- Side Channel and area contiguous to the Skagit River in southern project area are identified as palustrine scrub shrub seasonally flooded (PSSC) wetlands
- Forested areas separating side channel from Skagit River in north and area adjacent to Gardner Road in south are designated as a palustrine forested temporarily flooded (PFOA) wetlands
- Sand bar in southern project area (known locally as Johnson Bar) is identified as a riverine lower perennial unconsolidated shore seasonally floodcu (R2USC) wetland.
- Two areas along waterward toe of levee in southern project area are identified as palustrine emergent seasonally flooded (PEMC) wetlands.

GBA utilize NWI only as a generalized map indication of the possible presence and extent of wetlands. Wetland delineations are always based on a site-specific analysis.

<u>3.2 Soil Survey of Skagit County</u> - The Soil Survey is compiled by the Natural Resource Conservation Service and includes mapped soil units registered to detailed descriptions of soil characteristics. The survey maps five soil units within the property boundaries:

56 Field silt loam is mapped over portions of the northern project area adjacent to Gages Slough and the side channel. These areas are not protected by the existing levce. The Field map unit is a very deep, moderately well drained soil found on flood plains. Permeability of the soil is moderate and available water capacity is high. Effective rooting depth is limited by a seasonal high water table ranging from 24 to 48 inches from November through May. The Field soil is not included on the local hydric soil list. Hydric components consisting of Skagit and Sumas soils are included in the map unit under criteria 2B3.

57 Field silt loam, protected is mapped over a portion of the southern project area on the landward or protected side of the levee. The Field map unit is a very deep, moderately well drained soil found on flood plains. Permeability of the soil is moderate and available water capacity is high. Effective rooting depth is limited by a seasonal high water table ranging from 36 to 48 inches from November through May. The water table has been lowered by drainage activities including ditching of a farmland. The Field (protected) soil is not included on the local hydric soil list. Hydric components consisting of Skagit and Sumas soils are included in the map unit under criteria 2B3.

105 Pilchuck Variant fine sandy loam is mapped over a terrace of the southern project area waterward of the existing levee and landward of the Skagit River. The Pilchuck Variant unit is a

3

very deep, moderately well drained soil typically found on terraces and levees. Permeability of the Pilchuck Variant soil is moderately rapid and available water capacity is moderate to moderately high. Effective rooting depth is limited by a seasonal high water table ranging from 48 to 60 inches from November through May. The soil is subject to occasional brief period of flooding from November to April. The Pilchuck Variant soil is not included on the local hydric soil list although isolated (hydric) wet spots may exist within the unit boundaries.

118 Sedrowoolley silt loam is mapped over a portion of the central project area both landward and waterward of the existing levec. The Sedrowooley unit is a very deep moderately well drained soil found on alluvial terraces. Permeability of the soil is moderate and available water capacity is high. A seasonal high water table is present in the unit ranging from 36 to 60 inches from November to April. The Sedrowoolley soil is not included on the local hydric soil list although isolated (hydric) wet spots may exist within the unit boundaries.

Hydric inclusion found within the Field map units are identified as hydric under criteria 2B3 as follows:

2. Soil in Aqua suborders, great groups, or subgroups, Labels suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:

B) poorly drained or very poorly drained and have either:

(3) water table equal to 1.0 feet from the surface during the growing season if permeability is less than 6.0 inches/hour in any layer within 20 inches.



<u>3.3 Priority Habitats and Species Data Base</u> - The Priority Habitats and Species (PHS) Database maintained by the Washington Department of fish and Wildlife (WDFW) was reviewed to determine the presence of Federal and State endangered, threatened, sensitive, and candidate species and habitats of special importance. PHS lists a number of aquatic habitat types which are

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generally consistent with designations identified under the National Wetland Inventory. In addition habitat areas are identified on adjacent agricultural lands (Gages Slough, North) utilized by wintering concentrations of trumpeter swans (Olar buccinator) and tundra swans (Olar columbianus). Biotic detection of a gray wolf (Canis lupus) was documented within the project vicinity in 1993.

All five species of Pacific salmon occur in the Skagit River and utilize the project area including Chinook (Oncorhynchus tshawytscha) listed as threatened under the Federal Endangered species Act (ESA). Puget Sound Steelhead (Oncorhynchus mykiss) also listed as threatened under the ESA utilize the project area. In addition to chinook and steelhead, bull trout (Salvelinus confluentus), listed as threatened under the ESA are documented in the project area.

4. Project Description

The subject proposal is to enlarge both the width and height of the existing Skagit River levee along the entire 1.53 mile project site. The project extends from the Burlington city limits at Gardner Road north to the Terminus of the Burlington Northern Santa Fe Railroad on Lafayette Road in the north. The top of levee will be extended approximately 4 feet in height and the width will be increased approximately 60 feet landward of the existing toc. Construction will occur on top and landward of the existing levee. The project is proposed by Skagit County Dike, Drainage and Irrigation District Number 12 for the purpose of protecting lives and property from Skagit River flooding. Detailed plans have been submitted to Skagit County Planning and Development Services in support of an application for a Shoreline Substantial Development Permit. A conceptual site plan is included as an attachment to this assessment. (Attachment A: Vicinity Map)

5. Site Investigation

GBA utilized the <u>1987 Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1)</u> in the preparation of this report. The Corps Manual and <u>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valley's and Coast Region (Version 2.0/May 2010)</u> represent the accepted standard for identifying and delineating wetlands for jurisdictional purposes under the Clean Water Act and for Skagit County for use in conjunction with the Growth Management Act mandated Critical Areas Ordinance.

5.1 Wetland Definition - The manual incorporates the Clean Water Act Definition of Wetlands as follows:

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

5.2 Wetland Parameters - The definition requires that three interrelated defining elements or parameters be established when identifying wetlands. These parameters are wetland hydrology, hydric soils and hydrophytic vegetation.

5.2.1 Wetland Hydrology - Water is the driving force, which creates and sustains wetlands. The 1987 Manual and subsequent Corps guidance identifies wetlands as areas where soils are inundated or continuously saturated for a minimum of 5% of the growing season (approximately 12.5 days for Western Washington). When direct observation of the water table cannot be made, hydrology is determined by relying upon hydrologic indicators such as hydric soil characteristics, water marks, drift lines, sediment deposits or drainage patterns.

<u>5.2.2 Hydric Soils</u> - Wetlands exhibit hydric soils. These are soils which are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions. These are conditions where no free oxygen is present in the upper soil horizons. Typical field indicators of hydric soils are the presence of a thick organic layer, or in predominantly mineral soils such as found on this site, a low chroma matrix (gray color) and/or bright mottling. Soil chromas are determined by comparing soil samples with color chips in the Munsell Color Charts.

<u>5.2.3 Hydrophytic Vegetation</u> - The U.S. Fish and Wildlife Service has classified wetland vegetation according to its frequency of occurrence in wetlands:

Obligate wetland species (OBL) occur in wetlands greater than 99% of the time. Facultative wetland species (FACW) occur in wetlands greater than 67% of the time. Facultative species (FAC) occur in wetlands 34%-66% of the time. Facultative upland species (FACU) occur in wetlands less than 34% of the time. Upland species (UPL) occur in wetlands less than 1% of the time.

Generally the hydrophytic vegetation parameter is satisfied when greater than 50% of the species present at an observation point have an indicator status of OBL, FACW and/or FAC; when two or more dominant species have observed morphological or known physiological adaptations for occurrence in wetlands; or when other indicators of hydrophytic vegetation are present. Because the site has been manipulated through regular tilling associated with agricultural production, GBA considered and utilized a modified disturbed site approach. The vegetation parameter was assumed to be satisfied at throughout the site.

5.3 Data Collection - GBA assessed the project area during the drought of late summer/early fall of 2012 during (August and October) in two phases.

Phase 1 was conducted on August 20, 2012. The project area (area within 300 feet of proposed project activities) was traversed and site conditions were documented in field notes and photographs. Gages Slough was observed to be functionally isolated from the project site by Lafayette Road. Gages Slough is located west of the road and the project site is on the east. Additionally the side channel discussed under existing conditions was observed to be hydrologically connected to the Skagit River. Because of very dry surface conditions areas exhibiting a predominance of hydrophytic vegetation were identified for further assessment

Phase 2 was conducted on October 1 and 3, 2012. Gages Slough, located within the right of way of Lafayette Road was eliminated from further analysis pursuant to SCC 14.24.230 (5). The wetland edge associated with the side channel was determined to be coexistent with the ordinary high water mark (OHWM) of the Skagit River. The OHWM of the Skagit River was identified along the entire project site. Wetland data was collected at locations identified during Phase 1.

<u>5.4 Gages Slough</u> – Because Gages Slough is separated from the project site by Lafayette Road Skagit County may modify the required buffer width to end at the western roadway edge pursuant to SCC 14.24.230. The applicable provisions and criteria will be discussed further under the regulatory analysis contained in subsection 7.1.2 of the Regulatory Analysis.

5.5 Side Channel and Skagit River – The OHWM associated with the side channel of the Skagit River was identified in accordance with the Statutory Definition provided in the Shoreline Management Act (RCW 90.58) and the Skagit County Shoreline Management Master Program (SCC 14.26) as follows:

6

"Ordinary high water mark (OHWM) on all lakes, streams, and tidal water is that mark that will be found by examining the beds and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971 or as it may naturally change thereafter: <u>PROVIDED</u>, that in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining salt water shall be the line of mean higher high tide and the ordinary high water mark adjoining fresh water shall be the line of mean high water."

The OHWM along the side channel was identified near the waterward toe of bank at the transition from herbaceous species consisting of obligate and facultative wetland species dominated by water pepper and reed canary grass to woody facultative wetland and facultative upland species dominated by Himalayan blackberry, alder and cottonwood. The OHWM was flagged OHWM 1 through OHWM 5. The OHWM of the Skagit River was identified at the transition from bare rock rip rap to woody vegetation dominated by Himalayan blackberry and willow.



Photo 3 – View north showing OHWM of side channel beneath pink flag at arrow.

Photo 4 – View north showing OHWM of Skagit River at arrow.

The OHWM of the side channel connects to the OHWM of the Skagit River at its point of discharge to the river. The OHWM of the side channel and the river are at the same approximate elevation. The OHWM along the armored river bank was identified on an aerial photograph attached to this report. The OHWM of the unarmored shoreline along the southern portion of the project site was not identified because contiguous wetlands supercede the riparian buffer and shoreline setback requirements. The landward boundary of the side channel/wetland was identified on site flagged as OHWM and surveyed. The boundary survey is identified on the attached aerial photograph.

5.6 Isolated Wetland/Wetland Mosaic - Transects were established through areas exhibiting a predominance of hydrophytic vegetation. Seven data points were established. Soil test pits were excavated to a depth of 21 inches. Hydrology, soil and vegetation were assessed at each point. Data collected is summarized on the following table. Additional data is contained on data forms attached to this report. (Attachment B: Wetland Determination Data Forms)

DP	Hydrology	Soil	Dominant Vegetation	Status
	*Saturation @ surface -	*Silty clay loam -	*Populus balsamifera FAC (7%)	
1.0	Water marks - Sediment	2.5Y 5/2 - 5%	Juncus effuses FACW (20%)	Wet
	deposits - Oxidized	redox 10YR 5/8 -	Scirpus acutus OBL (10%)	
	rhizospheres	Depleted matrix	Phalaris arundinacea FACW (40%)	
	No indicators	Silt loam – 2.5Y	*Populus balsamifera FAC (50%)	
2		4/3 – No redox	Rubus discolor FACU (10%)	Up
			Phalaris arundinacea FACW (100%)	
	No indicators	Silt loam - 2.5Y	*Phalaris arundinacea FACW (100%)	
3		5/3 – No redox		Up
	No indicators	Silt loam - 2.5Y	*Agrostis tenuis FAC (60%)	
4		4/3 – No redox	Phalaris arundinacea FACW (30%)	Up
	*Saturation @ 4" -	*Fine sandy loam -	*Phalaris arundinacea FACW (100%)	
5	Sediment deposits -	2.5Y 4/1 - 10%		Wet
	Oxidized rhizospheres	redox 10YR 5/8 -		
	_	Redox dark surface		
	*Saturation @ 6" -	*Fine sandy loam -	*Phalaris arundinacea FACW (100%)	
6	Oxidized rhizospheres	10YR 4/1 - 20%		Wet
	-	redox 10YR 5/8 -		
1		Redox dark surface		
	*Saturation @ surface -	*Silty clay loam -	*Phalaris arundinacea FACW (100%)	
1	Oxidized rhizospheres	2.5Y 3/1 - 15%	Thuja plicata FAC (20%)	Wet
		redox 5YR 4/6 -		
		Redox dark surface		

Table 1 - Wetland Data Summary Table

*Wetland parameter satisfied

Based on assessment of the above data two wetlands were identified: A linear wetland (Wetland A) of approximately 2,954 square feet was identified in conjunction with data points 1, 2 and 3. The wetland is located at the landward (west) toe of the existing levee at the approximate mid point of the project site. The wetland is classified as palustrine emergent seasonally flooded and depressional under the Cowardin Classification and Hydrogeomorphic systems respectively. The wetland is shaped like an elongated isosceles triangle measuring approximately 30 feet wide in the south and tapering to a point approximately 150 to the north. Wetland data point (1) exhibited hydric soil indicators through surface saturation, sediment deposits and oxidized rhizospheres along living roots. Soil consisted of silty clay loam and displayed a dark depleted matrix chroma accompanied by bright mottles. Dominant plants included facultative and obligate wetland species. By contrast upland data points (2 and 3) were observed to be at a slightly higher elevation and did not exhibit any indicators of wetland hydrology. Soil matrix was lighter and not accompanied by redoximorphic features. While the soil parameter was satisfied, bulrush (OBL) observed at data point 1 was absent.



Photo 5 - View of soil test pit excavated at data point 4. Note unconsolidated character of soil due to lack of moisture and light soil matrix.



Photo 6 – View of soil profile and test pit excavated at data point 7. Note consolidated profile, dark matrix and redox features.

A wetland mosaic (Wetland B) of approximately 25.5 acres consisting of several vegetation classes was identified through assessment of data points 4 though 7. The wetland extends from a linear feature along the waterward (southeastern) toe of the existing levee in the northwest, southeast approximately 2,100 feet to a point near Gardner Road. The linear feature shown in Photo 8 is classified as an F (fish habitat) water of the State. The wetland mosaic is classified as palustrine emergent, palustrine forested and palustrine scrub shrub seasonally flooded under the Cowardin Classification System and emergent under the Hydrogeomorphic system. Wetland data points (5, 6, 7) exhibited saturation at or near the soil surface accompanied by sediment deposits and oxidized rhizospheres. Soil consisted of fine sandy loam and silty clay loam and displayed a very dark matrix chroma accompanied by 10 to 20% contrasting redox. Dominant vegetation was reed canary grass (FACW). No indicators of wetland hydrology were observed at upland data point (4). Soil displayed a light matrix chroma absent of redoximorphic features. The vegetation parameter was satisfied through a mix of FAC and FACW species. Wetlands were flagged in the field and surveyed. (Attachment C: Wetland Delineation Site Plan)



Photo 7 – View North showing isolated linear wetland A. Wetland is 2,954 square feet in size and resembles an isolated ditch segment or artificial watercourse.

Photo 8 – View southwest showing northeast portion of Wetland B. The wetland mosaic totals approximately 25.25 acres in size and includes multiple vegetation classes.

5.7 Wetland Rating and Functions - The isolated wetland and wetland mosaic were rated using the Washington State Wetland Rating System for Western Washington (Revised 2004/Updated October 2008). The rating system is designed to differentiate between wetlands based on their sensitivity to disturbance, rarity, the functions they provide and whether they can be replaced or not. The rating system divides wetlands into six different hydrogeomorphic (HGM) classes. These classes sort wetlands into groups that function in similar ways. The rating system then rates the wetlands based on specific functional attributes relating to water quality, hydrologic and habitat functions. The following table summarizes the assessment detailed in the rating attached to the report. (Attachment D: Wetland Rating Forms)

Wetland HGM	Cowardin	Water Quality	Hydrologic	Habitat	Totai	Category
A Depressional	PEMC	10	7	9	26	IV
Depressional	PEMC					
B Riverine	PFOC	22	18	28	68	I
	PSSC				_	

Table 2 – Wetland Rating Summary

PEMC = Palustrine Emergent Seasonally Flooded PFOC = Palustrine Forested Seasonally Flooded PSSC = Palustrine Scrub Shrub Seasonally Flooded

The rating system defines Category I and IV wetlands as follows:

"Category I wetlands are those that 1) represent a unique or rare wetland type; or 2) are more sensitive to disturbance than most wetlands; or 3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or 4) provide a high level of functions. We cannot afford the risk of any degradation to these wetlands because their function and values are too difficult to replace. Generally these wetlands are not common and make up a small percentage of the wetlands in the region."

"Category IV wetlands have the lowest levels of functions of functions (scores less than 30 points) and are often heavily disturbed. These are wetlands that we should be able to replace, and in some cases be able to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions, and also need to be protected."

Because Wetland A is relatively small, isolated in the landscape and disturbed its water quality, hydrologic and habitat functions received low scores. (Note: Use of term "isolated" throughout this report is not intended to suggest a jurisdictional determination)

Because of its large size diversity of vegetation classes and landscape position (adjacent to the Skagit River), Wetland B received high ratings for each function. Wetland B received a particularly high habitat function score because of its emergent, scrub shrub and forested vegetation classes, richness of particular plant species, interspersion of habitat types and special habitat features.

6. Regulatory Analysis

The following protection standards and/or buffer requirements relating to Gages Slough, Skagit River and Wetlands A and B are addressed below. Buffers are considered the primary tool for protecting critical area functions and values. Chapter 14.04 defines a critical area buffer as "The area that is contiguous to and protects a critical area which is required for the continued maintenance, functioning, and/or structural stability of a critical area." <u>6.1 Riparian Protection Standards</u> – Subsection 14.24.530 of the CAO establishes standards for the protection of riparian areas:

6.1.1 - The standard riparian buffer for the Skagit River (Type S Water) is 200 feet. The buffer is measured from the OHWM in a landward direction. On site, the buffer is be measured from the OHWM of the river including the side channel as identified and discussed under Existing Conditions.

6.1.2 - The standard riparian buffer for Gages Slough (Type F Water > 5 feet width) is 150 feet Because Gages Slough is separated from the project site by Lafayette Road, Skagit County may modify the required buffer width to end at the western roadway edge pursuant to SCC 14.24.230 provided that the following criteria area met. (criteria appear in italics):

(a) The isolated part of the buffer does not provide additional protection of the wetland;

Gages Slough is located contiguous to the western edge of Lafayette Road. The project site is functionally isolated from the slough (wetland)

(b) The isolated part of the buffer provides insignificant biological, geological or hydrological buffer functions relating to the wetland;

The isolated part of the buffer (east of Lafayette Road) is currently cleared farmland and does not provide significant functions relating to the slough (wetland)

(c) If the resulting buffer distance is less than 50% of the standard or optional buffer for the applicable wetland category, no further reduction shall be allowed.

The slough has not been provided with a qualitative rating or category, however, the wetland edge is located within the western right of way of Lafayette Road. Because the proposed project is located east of the road no future project related buffer reductions will be needed or requested.

6.2 Wetland Protection Standards - Subsection 14.24.230 of the CAO establishes standards for the protection of wetlands:

6.2.1 - Wetland A will be filled as a result of landward expansion of the levee. Subsection 14.24.230 (6) (b) provides for partial exemption of Category IV wetlands between 1000 and 4000 square feet in area. Such wetlands may be exempt from the mitigation sequencing requirement to avoid impacts based on the following conditions (criteria appear in italics):

The wetland is isolated – Wetland A is a 2,954 square foot depressional wetland isolated from other wetlands and aquatic features in the vicinity by the existing Skagit River levee.

The wetland is not associated with a riparian corridor - Wetland A is isolated from the Skagit River corridor by the existing levee and is approximately 300 linear feet from the OHWM of the River.

The Wetland is not part of a wetland mosaic – Wetland A is isolated from other wetlands in the vicinity including the Wetland mosaic identified as Wetland B. Wetland B is located on the waterward side of the levee approximately 900 linear feet south of Wetland A.

Environmental & Land Use Services

Such wetlands may be exempt from the mitigation sequencing requirement to first avoid impacts where the following criteria are met. (criteria appear in italics):

The wetland meets the criteria listed above - The above criteria have been satisfied.

The project impacts are fully mitigated – Project impacts have been mitigated by avoiding waterward expansion of the levee and complying with requirements of the U.S. Army Corps of Engineers and WA State Department of Ecology.

The CAO provides for consideration of jurisdictional substitution under Subsection 14.24.040 (3) as follows:

"Jurisdictional Substitution. In cases where other agencies possess jurisdictional control over critical areas and it is determined by the administrative official that the permit conditions satisfy the requirements of this chapter, those requirements may substitute for the requirements of this Chapter. Such requirements shall be a condition of critical area approval and be enforceable by the County. Such agencies may include, but are not limited to, The United States Army Corps of Engineers, Environmental Protection Agency and Fish and Wildlife Services; local tribes and the Washington State Department of Ecology, Department of Natural Resources and Department of Fish and Wildlife. The County shall notify the applicant in writing when any such substitution is made."

The applicant will obtain a Nationwide 18 permit (Minor Discharges) or other appropriate nationwide permit as required by the U.S. Army Corps of Engineers to fill Wetland A. In addition the Corps will provide opportunities for public, agency and tribal involvement in review of the project. GBA have concluded that the permit requirements and authorizations associated with the Corps permit, DOE water quality certification and Coastal Zone Certification requirements and other National and Regional General Conditions, and Notification Conditions will provide critical area protection sufficient to satisfy the requirements of the CAO. Threatened and endangered species, aquatic habitat, fisheries and water quality will be addressed and included as specific permit conditions by Federal and State agencies of jurisdiction.

6.2.2 – Wetland B Subsection 14.24.230 (1) (b) of the CAO establishes optional buffer requirements for wetlands based on habitat score and proposed land use intensity. The habitat score for Wetland B is 28. GBA have determined that the proposed land use intensity is moderate. The required optional buffer for Wetland B is 155 feet. Project activities are proposed to encroach into 0.58 acres of the buffer along the southern portion of the project area. Because of the linear nature of the project and appropriate candidate locations for increased buffer widths a buffer averaging approach to buffer impacts is being proposed.

6.3 Buffer Width Averaging

Subsection 14.24.240 (2) provides for Buffer Width Averaging which allows limited reductions of buffer width in specified locations, while requiring increases in others. Averaging of required buffer widths is allowed only if the applicant demonstrates that all of the following criteria are met: (criteria appear in italics)

(a) Averaging is necessary to accomplish the purpose of the proposal and no reasonable alternative is available.

The location of the northwestern boundary of Wetland B relative to the existing levee and proposed project activities requires that the buffer be reduced in two areas within the southern

portion of the project site. The areas are located adjacent to the northwest boundary of the wetland (0.40 acres) and at a point approximately equidistant between the northern wetland boundary and Gardner Road (0.18 acres). The total area proposed to be decreased is 0.58 acres. The purpose of the project is to protect lives and property from Skagit River Flooding.

(b) Averaging buffer width will not adversely impact the wetland functions and values.

Decreasing the buffer width in the identified areas is not anticipated to impact wetland functions and values because the existing levee is already in place and proposed improvements will occur landward of the existing footprint.

(c) The total area contained in the wetland buffer after averaging is no less than that contained within the standard buffer prior to averaging.

The total area contained in the buffer will be maintained consistent with the standard by increasing the buffer width along the northern wetland boundary. The area that will be decreased consists of cleared pasture landward of the existing levee while the area increased consists of a mixed forest canopy waterward of the levee.

(d) The buffer width shall not be reduced below 75% of the standard buffer width.

The buffer will be reduced by 25% (to 116 feet) of the standard at the closest point to project activities. The proposed buffer will not be reduced below 75% of the standard buffer. (Attachment E: Buffer Averaging Plan)

7. Summary and Conclusion

Because all project activities will occur landward of the existing Skagit River levee, little impact was identified through our assessment. Standard riparian buffers will be maintained relative to the Skagit River and Side channel. Buffer averaging will decrease the standard buffer for Wetland B in areas of cleared pasture landward of the existing levee while increasing the buffer in a mixed forest canopy waterward of the levee. Wetland A which is partially exempt from regulation under the County CAO will be filled and addressed pursuant to jurisdictional substitution by the U.S. Army Corps of Engineers. Levee improvement will provide increased protection of lives and property from Skagit River flooding.

8. Closure

While GBA utilized currently accepted methods and protocols for the identification of habitat conservation areas, the findings and conclusions rendered in this report represent our professional opinion. Concurrence should be obtained from Skagit County Planning and Development Services and other agencies of jurisdiction prior to initiating remediation actions or mitigation planting. Thank you for contacting us with your project. Please call either Patricia Bunting or myself with any questions relating to this report.

Patricia Bunting, Wetland Ecologist/PWS

Oscar Graham, Shoreline Planner

<u>Graham-Bunting Associates</u> Dike District 12 Assessment: November 8, 2012

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Personal Communications

Cooper, John. Senior Planner/Geologist - Skagit County Planning and Development Services; Telephone conversation regarding Skagit County Critical Area Ordinance requirements: October, 2012.

Semrau, John. Semrau Engineering and Surveying, PLLC; Telephone Consultation regarding information: August – November 2012.

14



Wetland Field Data Forms

Attachment B

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

Project/Site: Levee Modification	City/County: S	ikagit	Sampling Date: 10/1/2012
Applicant/Owner: Dike District 12		State: WA	Sampling Point: DP-1
Investigator(s): Pat/Oscar, Graham-Bunting Associates	Se	ction, Township, Range: <u>\$33, T34</u>	I, R4E
Landform (hillslope, terrace, etc.): <u>alluvial terrace</u>	Local relief (r	concave, convex, none): <u>conçave</u>	Slope (%); <u>1</u>
Subregion (LRR): A	Lat: <u>48 28`80"</u>	Long: N122, 17' 54.97"	Datum:
Soil Map Unit Name: Sedrowooiley silt loam		NWI classificat	ion: emergent
Are climatic / hydrologic conditions on the site typical for this	time of year? Yes 门 🕴	No 🛛 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology signi	ficantly disturbed?	Are "Normal Circumstances" pres	ent? Yes 🖾 No 🗔
Are Vegetation, Soil, or Hydrology natur	ally 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? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ No □ Yes ⊠ No □ Yes ⊠ No □	is the Sampled Area within a Wetland?	Yes 🖾 No 🗌
Remarks: end of long drought			

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 25 ft)	<u>% Cover</u>	Species?	Status	Number of Dominant Species		
t. Populus balsamifera	7	<u>Y</u>	FAC	That Are OBL, FACW, or FAC	: 4	(A)
2				Total Number of Dominant		
3			_ 	Species Across All Strata:	4	(B)
4.			_			• •
	7	= Total C	Cover	Percent of Dominant Species		() ()
Sapting/Shrub Stratum (Plot size: 10 ft)	<u>. </u>			That Are OBL, FACW, of FAC	. 100	(/~/ 15)
1. Alnus rubra	2%	N	FAC	Prevalence index worksheet		•
2. Juncus effusus	20	Y	FACW	Total % Cover of:	Multiply by:	
3 Scirpus acutus	10	Y	OBL	OBL species	x t =	_
A		<u> </u>		FACW species	x2=	-
т. <u></u>				FAC species	x3=	-
o	22			EACH species	×d =	-
Herb Stratum (Plot size: 5 ft)	<u>JZ</u>	= 10(a) C	over		×+	-
1. Obelerie arundinacea	40	v	FACIN	OPL species	xo=	-
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		<u> </u>	<u>, , , , , , , , , , , , , , , , , , , </u>	Column Lotals:	(A)	~ (B)
2	<u> </u>	<u> </u>	····	Prevalence Index = B/A	=	
3				Hudrophutic Veretation Indi		
4	<u></u>		<u> </u>	Hydrophytic vegetadon indk	Jators;	
5	·			April 1 est for Hydrophytic	Vegetation	
6		<u> </u>		Dominance Test is >50%		
7	<u> </u>			[] Prevalence Index is ≤3.0"		
8				Morphological Adaptations	1 (Provide support	ing
9				data in Remarks or on :	a separate sheet)	
10.				U Wetland Non-Vascular Pla	nts'	
11		<u> </u>		Problematic Hydrophytic V	egetation' (Explain	n)
····	40	= Tota! C		Indicators of hydric soil and w	etland hydrology r	nust
Woody Vine Stratum (Plot size:)	<u></u>			be present, unless disturbed or	r problematic.	
1.						
2				Hydrophytic		
		= Total C		Present? Yes 🕅 ł	No 🗔	
% Bare Ground in Herb Stratum		- + 0(a) 0	UV61			
Remarks: Hydrophytic vegetation indicator, > 50% FAC or	greater, is n	net.		<u>1</u>		
	-					ļ

SOIL

Sampling Point: DP-1

		commute absence of anticators.
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) %	Color (moist) % Type'	Loc Texture Remarks
<u>0-20*+ 2.5Y 5/2 95</u>	<u>10YR 5/8 5 D N</u>	<u>ASiltClayLm</u>
	· · · · · · · · · · · · · · · · ·	
Type: C=Concentration, D=Depletion, R	M#Reduced Matrix, CS=Covered or Coated	Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to a	all LRRS, unless otherwise noted.)	
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
[] Histic Epipedon (A2)		L Red Parent Material (1F2)
Elack Histic (A3)	Loamy Mucky Mineral (r)) (except w	CTRATIC Very Straubw Dark Sunace (1712)
Depleted Below Dark Surface (A11)	Evaling Gleged Madrix (F2) Denieted Matrix (F3)	
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		
Depth (inches):		Hydric Soil Present? Yes 🖂 No 📋
Remarks: Hydric soil indicator, low chrom	a matrix with redox concentrations	
,		
1		
HYDROLOGY		
HYDROLOGY Wetland Hydrology Indicators:		
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi	red; check all that apply)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi	red: check all that appiγ)	Secondary Indicators (2 or more required) Eept MLRA Water-Stained Leaves (B9) (MLRA 1, 2,
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi Surface Water (A1) High Water Table (A2)	ired: check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) cept MLRA I, 2, 4A, and 4B)
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HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ired: check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Saft Crust (B11) Aquatic Invertebrates (B13)	Secondary Indicators (2 or more required) cept MLRA UVAter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
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HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requit Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Aigal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Saturation Present? Yes Saturation Present? Yes Saturation Present?	red: check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Saft Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Line Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) (B7) Other (Explain in Remarks) 6 (B8)	Secondary Indicators (2 or more required) Sept MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Soils (C6) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Aigal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Cincludes capillary fringe) Describe Recorded Data (stream gauge,	ired: check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Sait Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Lin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) (B7) Other (Explain in Remarks) e (B8) No Depth (inches): No Depth (inches): monitoring well, aerial photos, previous inspectation	Secondary Indicators (2 or more required) cept MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Soils (C6) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No wetland Hydrology Present? Yes No
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi 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) Ihundation Visible on Aerial Imagery (Experiment) Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Saturation Present? Yes [Includes capillary fringe) Describe Recorded Data (stream gauge,	ired: check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Saft Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Lii Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) (B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): monitoring well, aerial photos, previous inspect	Secondary Indicators (2 or more required) Sept MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Soils (C6) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No ections), if available: very low ground water from drought
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requit 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 (Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Saturation Present? Yes Saturation Present? Yes Saturation Present? Sective Recorded Data (stream gauge, Remarks: Wetland hydrology indicators, stream	ired; check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Saft Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Lii Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) (B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): monitoring well, aerial photos, previous inspectation, water marks and sediment deposite	Secondary Indicators (2 or more required) Sept MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Soils (C6) FAC-Neutral Test (D5) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Vetland Hydrology Present? Yes No wetland Hydrology Present? Yes No No ections), if available: very low ground water from drought its are met. This area is a very small depression at toe of levee.
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requit 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 (Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Saturation Present? Yes Saturation Present? Yes Saturation Present? Priore Recorded Data (stream gauge, Remarks: Wetland hydrology indicators, stream	red; check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Saft Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Lit Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) (B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): monitoring well, aerial photos, previous inspectation, water marks and sediment deposite	Secondary Indicators (2 or more required) Sept MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Soils (C6) FAC-Neutral Test (D5) (LRR A) Frost-Heave Hummocks (D7) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No No ections), if available: very low ground water from drought its are met. This area is a very small depression at toe of levee.
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi 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 (Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Saturation Present? Yes Saturation Present? Yes Saturation Present? Secribe Recorded Data (stream gauge, Remarks: Wetland hydrology indicators, stream	red: check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Saft Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Lin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) (B7) Other (Explain in Remarks) 6 (B8) No Depth (inches): monitoring well, aerial photos, previous inspressaturation, water marks and sediment deposition	Secondary Indicators (2 or more required) cept MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Soils (C6) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No ections), if available: very low ground water from drought its are met. This area is a very small depression at toe of levee.
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one requi 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) Ihundation Visible on Aerial Imagery (Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes Remarks: Wetland hydrology indicators, stature	ired: check all that apply) Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Sait Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Lin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) (B7) Other (Explain in Remarks) e (B8) No Depth (inches): No Depth (inches): monitoring well, aerial photos, previous inspectation, water marks and sediment deposition	Secondary Indicators (2 or more required) cept MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Soils (C6) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes S No ections), if available: very low ground water from drought its are met. This area is a very small depression at toe of levee.

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

Project/Site: Levee Modification	City/County: Skagit		Sampling Date: 10/1/2012
Applicant/Owner: Dike District 12		State: WA	Sampling Point: <u>DP-2</u>
Investigator(s): Pat/Oscar, Graham-Bunting Associates	Section, 1	Fownship, Range: <u>S33, T34N</u>	, R4E
Landform (hillslope, terrace, etc.): <u>altuvial terrace</u>	Local relief (concave	e, convex, none): <u>concave</u>	Slope (%): <u>1</u>
Subregion (LRR): A Lat: 44	8 28 80"	Long: <u>N122, 17' 54.97"</u>	Datum:
Soil Map Unit Name: Sedrowoolley silt loam		NWI classificati	on: emergent
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 "N	vormal Circumstances" prese	ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally prol	blematic? (If nee	ded, explain any answers in i	Remarks.)
SUMMARY OF FINDINGS - Attach site map showin	ng sampling point	locations, transects,	important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ No □ Yes □ No ⊠ Yes □ No ⊠	is the Sampled Area within a Wetland?	Yes 📑 No 🖾
Remarks: end of long drought			

VEGETATION – Use scientific names of plants.

	Absolute	Dominan	t Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 25 ft)	% Cover	Species'	<u>Status</u>	Number of Dominant Species	
1. Populus balsamifera	<u>50</u>	<u>Y</u>	<u>FAC</u>	That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant	
3	· · · · · · · · · · · ·			Species Across All Strata: 3(B)	
4		. <u> </u>		Percent of Deminent Provide	
	50	⇒ Total C	Cover	That Are OBL, FACW, or FAC: 75 (A/	B)
Sapling/Shrub Stratum (Plot size: 10 ft)					_,
1. Rubus discolor	<u>10</u>	<u>Y</u>	FACU	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3	···			OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	10	= Total C	Cover	FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)				UPL species x 5 =	
1. Phalaris arundinacea	100	<u>Y</u>	<u>FACW</u>	Column Totals: (A) (B)
2					•
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5.				Rapid Test for Hydrophytic Vegetation	
6.				🛛 Dominance Test is >50%	
7.				☐ Prevalence Index is ≤3.0 ¹	
8		<u> </u>		Morphological Adaptations ¹ (Provide supporting	
۰. <u> </u>				data in Remarks or on a separate sheet)	
10				Wetland Non-Vascular Plants ¹	
14			<u>_</u> _	Problematic Hydrophytic Vegetation ¹ (Explain)	
11,	400			¹ Indicators of hydric soil and wetland hydrology mus	t
Woody Vine Stratum (Plot size:)	100		over	be present, unless disturbed or problematic.	
<u>1.</u>					
2	- <u></u>			Hydrophytic	
•···		- Total C		Present? Ves 🕅 No 🕞	
% Bare Ground in Herb Stratum		- TOLAT C	0¥01		
Remarks: Hydrophytic vegetation indicator, > 50% FAC or	r greater, is n	net.		<u> </u>	
- -					

SOIL

Profile Des	cription: (Describe	e to the dep	pth needed to	document the i	indicator	or confirm	n the absence of indicators.)
Depth	Matrix Color (moist)	94	Color (moint)	Redox Feature	<u>5</u> Tumo ¹		Toxture Bomadre
		100	OOOL THOUGH				
0-0		100					<u>si</u>
5-9	<u>2.5Y_4/3</u>	100				·	<u>si</u>
9+	<u>2.5Y 4/2</u>	100					<u>sl</u>
		_ <u></u>					
·····	· • • • • • • • • • • • • • • • • • • •						
·	,						
1							2
_Type: C=C Hydric Soil	Indicators: (Appl	pletion, RM	t LRRs, unles	trix, CS≕Covere s otherwise not	d or Coate	ed Sand G	rainsLocation: PL=Pore Lining, M=Matrix.
			Sandy Re	dox (S5)			\square 2 cm Muck (A10)
Histic E	pipedon (A2)		Stripped	Matrix (S6)			Red Parent Material (TF2)
Black H	istic (A3)		Loamy M	ucky Mineral (F1) (except	MLRA 1)	Very Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)		Loamy G	leyed Matrix (F2)		Other (Explain in Remarks)
Deplete	d Below Dark Surfa	ce (A11)	Depleted	Matrix (F3)			· · ·
📋 Thick Da	ark Surface (A12)		📋 Redox Da	ark Surface (F6)			³ Indicators of hydrophytic vegetation and
Sandy M	Mucky Mineral (S1)		Depleted	Dark Surface (F	7)		wetland hydrology must be present,
Sandy C	Gleyed Matrix (S4)		Redox D	epressions (F8)			unless disturbed or problematic.
Restrictive	Layer (if present):						
Denth (in							
Deptit (it	aches)						Hydric Soil Present? Yes 🗌 No 🔀
)GY						· · · · · · · · · · · · · · · · · · ·
Wetland Hy	vdrology Indicator						
Primary Ind	icators (minimum of	 one require	ed: check all th	at apply)			Secondary Indicators (2 or more required)
	Water (A1)		□ Wat	er-Stained Leave	es (89) (e)	xcept MLF	RA Water-Stained Leaves (B9) (M) RA 1, 2.
High W	ater Table (A2)			. 2. 4A. and 4B) 1		4A. and 4B)
Saturati	ion (A3)		Salt	Crust (811)			Drainage Patterns (B10)
U Water M	Aarks (B1)		🗌 Aqu	atic Invertebrate	s (B13)		Dry-Season Water Table (C2)
Sedime	nt Deposits (B2)		Hyd	rogen Sulfide Oo	dor (C1)		Saturation Visible on Aerial Imagery (C9)
🔲 Drift De	posits (B3)		Oxic	- lized Rhizosphe	res along	Living Roo	ots (C3) 🔲 Geomorphic Position (D2)
📋 Algal M	at or Crust (B4)		Pres	ence of Reduce	d iron (C4	i)	Shallow Aquitard (D3)
Iron Dei	posits (B5)		☐ Rec	ent Iron Reduction	on in Tilleo	I Soils (C6) FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stur	ted or Stressed	Plants (D	1) (LRR A)) Raised Ant Mounds (D6) (LRR A)
📋 Inundati	ion Visible on Aerial	Imagery (B	17) 🗌 Othe	er (Explain in Re	marks)		Frost-Heave Hummocks (D7)
📋 Sparsel	y Vegetated Concar	ve Surface ((88)				
Field Obse	rvations:			·			
Surface Wa	ter Present?	Yes 🗌 🛛 N	lo 🗌 🛛 Depth	(inches);			
Water Table	e Present?	Yes 🗌 N	io 🗌 🛛 Depth	(inches): <u>>20"</u>			
Saturation F (includes ca	Present? apillary fringe)	Yes 🗌 N	lo 🗌 Depth	(inches):	<u> </u>	Wetl	land Hydrology Present? Yes 🗌 No 🛛
Describe Re	ecorded Data (strea	m gauge, m	ionitoring well,	aeria) photos, pr	evious ins	pections),	if available: long drought season
							······································
	a de la della de la della d	17 A					
Remarks: V	vetiano hydrology in	dicators are	e not met. Soil :	saturation was n	ot present	, root zone	es were not oxidized.
Remarks: V	vetiano nyorology in	dicators are	e not met. Soil :	saturation was n	ot present	, root zone	es were not oxidized.

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

Project/Site: Levee Modification	City/County:	Skagit	Sampling Date: <u>10/1/2012</u>
Applicant/Owner: Dike District 12		State: WA	Sampling Point: <u>DP-3</u>
Investigator(s): Pat/Oscar, Graham-Bunting Associates	s	Section, Township, Range: <u>S33, T3</u>	4N_R4E
Landform (hillslope, terrace, etc.): alluvial terrace	Local relief	(concave, convex, none): concave	Slope (%): <u>1</u>
Subregion (LRR): A	Lat: <u>48 28 80"</u>	Long: <u>N122, 17' 54.97'</u>	* Datum:
Soil Map Unit Name: <u>Sedrowoolley silt loam</u>		NWI classific	ation: emergent
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes 🔲	No 🛛 (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology sign	nificantly disturbed?	Are "Normal Circumstances" pre	sent?Yes 🖄 No 🗌
Are Vegetation, Soil, or Hydrology natu	urally 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? Hydric Soil Present? Wetland Hydrology Present?	Yes 🛛 No 🗌 Yes 🗌 No 🖾 Yes 🗍 No 🖾	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks: end of long drought			

VEGETATION – Use scientific names of plants.

	Absolute	Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>25 ft</u>)	% Cover	Species? Status	Number of Dominant Species
1			That Are OBL, FACW, or FAC: 1 (A)
2			Total Number of Dominant
3		<u></u>	Species Across All Strata: <u>1</u> (8)
4	<u>.</u>		
Sapling/Shrub Stratum (Plot size: 10 ft)		= Total Cover	That Are OBL, FACW, or FAC: 100 (A/B)
1			Prevalence index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4.			FACW species x 2 =
5.		······································	FAC species x 3 =
		≠ ⊺otal Cover	FACU species x 4 =
Herb Stratum (Plot size: <u>5 ft</u>)			UPL species x 5 =
1. <u>Phalaris arundinacea</u>	100	Y FACW	Column Totals: (A) (B)
2		<u> </u>	
3			Prevalence index = B/A =
4			Hydrophytic Vegetation Indicators:
5			☐ Rapid Test for Hydrophytic Vegetation
6			☑ Dominance Test is >50%
7.			□ Prevalence index is ≤3.0 ¹
8			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9	_	·····	Wetland Non-Vascular Plants'
10			Problematic Hydrophytic Vegetation ¹ (Explain)
11			Indicators of hydric soil and wetland hydrology must
Moody Vine Stratum (Plot size:)	100	≃ Total Cover	be present, unless disturbed or problematic.
t			i
2			Hydrophytic
2			Vegetation
% Bare Ground in Herb Stratum		≈ Total Cover	
Remarks: Hydrophytic vegetation indicator, > 50% FA	C or greater, is n	net.	
			[

Depth	Matrix	Redox Features	1	Romarka
<u>(inches)</u> Color	(moist)%	Color (moist) % Type	Loc lextu	re <u>Remarks</u>
<u>0-5 10 YF</u>	R 4/4 100		<u>s</u>	
<u>5-9 2.5Y</u>	5/ <u>3 100</u>		<u>si</u>	
<u>9+ 2.5Y</u>	5/2 100		<u>sl</u>	
	·		<u> </u>	
·				
·····				
·				
]				2
¹ Type: C=Concent	ration, D=Depletion, I	RM=Reduced Matrix, CS=Covered or Coate	d Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indica	tors: (Applicable to		1 r	
Histosol (A1)	(4.0)	Sandy Redox (S5)	Ĺ	_) 2 cm Muck (ATV) T Red Barent Material (TE2)
Histic Epipedor	n (A2)	L same Munice Minoral (E1) (arcont		J New Parent Material (TP2)
	3) d= (8.4)	Loamy Gloved Mattix (E2)		Other (Evolain in Remarks)
Hydrogen Sum	0e (A4) u Dask Susfaar (A11)	Coarry Gleyed Matrix (F2) Depleted Matrix (F3)	L	
Depleted Below	V Dark Surface (A11)	Depreted Matrix (F3) Depreted Matrix (F3)	3	Indicators of hydrophytic vertetation and
	lace (A12)	Depleted Dark Surface (F0)		wetland hydrology must be present
Sandy Mucky r	Matrix (SA)	Redox Depressions (F8)		unless disturbed or problematic
Bestrictive Laver	lif presenft		Į	
Type:	(ii present)			
Depth (inches):			Hvd	ric Soil Present? Yes 🗔 No 🕅
Bamarkas Hudrin o	ail indicators are not r	not obroma matrix 3 is not dark and there a		
Remarks. Hyuncis	uit indicators are not i	net, chroma maux 5 is not dark and mere a		enaladona
HYDROLOGY				
Wetland Hydrolog	v Indicators:			
Primary Indicators	(minimum of one reg	ired: check all that apply)		Secondary Indicators (2 or more required)
Primary Indicators	(minimum of one req	uired; check all that apply)		Secondary Indicators (2 or more required)
Primary Indicators	(Minimum of one requ (A1)	ired: check all that apply)	kcept MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
Primary Indicators	<u>(minimum of one req</u> u (A1) ble (A2)	uired; check all that apply) Water-Stained Leaves (B9) (ex 1, 2, 4A, and 4B) Salt Crust (B11)	xcept MLRA	Secondary Indicators (2 or more required) U Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
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Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (I Sediment Dep	(<u>minimum of one req</u> (A1) ble (A2)) B1) osits (B2) (B3) rust (B4)	uired: check all that apply) Water-Stained Leaves (B9) (ex 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C4	kcept MLRA Living Roots (C3)	Secondary Indicators (2 or more required) UWater-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)
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Primary Indicators Surface Water High Water Ta Saturation (A3) Water Marks (I Sediment Depoint Drift Deposits (Algal Mat or Ci Iron Deposits (Surface Soil C Inundation Visit Sparsely Vege	(<u>minimum of one req</u> (A1) ble (A2)) B1) osits (B2) (B3) rust (B4) (B5) racks (B6) ible on Aerial Imagery tated Concave Surfac	Lired: check all that apply) Uter-Stained Leaves (B9) (ex. 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C4 Recent Iron Reduction in Tilled Stunted or Stressed Plants (D) (B7) Other (Explain in Remarks) e (B6)	kcept MLRA Living Roots (C3)) 1 Soils (C6) 1) (LRR A)	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)
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WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Levee Modification	City/County:	Skagit	Sampling Date: 10/3/2012
Applicant/Owner: Dike District 12		State: WA	Sampling Point: <u>DP-4</u>
Investigator(s): Pat/Oscar, Graham-Bunting Associates	s	ection, Township, Range: <u>S33, T341</u>	N, R4E
Landform (hillslope, terrace, etc.): <u>alluvial terrace</u>	Local relief	(concave, convex, none): <u>concave</u>	Slope (%): 1
Subregion (LRR): A L	at: <u>48 28 80</u>	Long: N122, 17' 54.97"	Datum:
Soil Map Unit Name: Sedrowcolley silt loam		NWI classificat	tion: <u>emergent</u>
Are climatic / hydrologic conditions on the site typical for this tin	ne of year? Yes 🗌	No 🖾 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology signific	antly disturbed?	Are "Normal Circumstances" pres	ent?Yes 🛛 No 🗌
Are Vegetation, Soii, or Hydrology naturali	y 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? Hydric Soil Present? Wetland Hydrology Present?	Yes 🛛 No 🗋 Yes 🗌 No 🕅 Yes 🗌 No 🕅	is the Sampled Area within a Wetland?	Yes 🔲 No 🛛
Remarks: end of long drought			

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_ ~- _ VEGETATION – Use scientific names of plants.

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	Absolute	Dominar	nt Indicator	Dominance Test workshee	t:	
<u>Tree Stratum</u> (Plot size: <u>25 ft</u>)	<u>% Cover</u>	Species	? Status	Number of Dominant Species	s	
1			·	That Are OBL, FACW, or FA	C: <u>2</u>	(A)
2		- <u></u>		Total Number of Dominant		
3				Species Across All Strata:	2	(B)
4.					<u>, ,, ,</u>	~~/
		= Total (Cover	Percent of Dominant Species	i C: 100	
Sapling/Shrub Stratum (Plot size: 10 ft)					0. 100	(700)
1				Prevalence Index workshee	et:	
2				Total % Cover of:	Multiply by:	
3				OBL species	.x1≐	<u> </u>
4				FACW species	x 2 =	
5				FAC species	x 3 =	_
		= Total (Cover	FACU species	x 4 =	-
Herb Stratum (Plot size: <u>5 ft</u>)		, oldi		UPL species	x5≍	
1. Agrostis tenuis	60	Υ	FAC	Column Totals:	(A)	- (B)
2. Phalaris arundinacea	30	Y	FACW			_ (5)
3. Cirsium arvense	10	N	FACU	Prevalence index = 8//	4 =	
4				Hydrophytic Vegetation Ind	licators:	
5.				🛛 🔲 Rapid Test for Hydrophyt	ic Vegetation	
6.	<u> </u>			Dominance Test is >50%		
7.				Prevalence Index is ≤3.0 ¹	i	
8			·	Morphological Adaptation	is" (Provide support	tina
9				data in Remarks or or	1 a separate sheet)	ĩ
10				🛛 🛄 Wetland Non-Vascular Pl	ants ¹	
10				📋 🔲 Problematic Hydrophytic 1	Vegetation ¹ (Explai	n)
//// <u></u>	400			¹ Indicators of hydric soil and v	wetland hydrology r	nust
Woody Vine Stratum (Plot size:)	100		Jover	be present, unless disturbed	or problematic.	
1.				· · · · · · · · · · · · · · · · · · ·	·	
2				Hydrophytic		
	•	= Total (Vegetation	No 🗖	
% Bare Ground in Herb Stratum			44461			
Remarks: Hydrophytic vegetation indicator, > 50% FAC or	greater, is n	net.			··	
						ł

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SOIL

Depth <u>Matrix</u>		Redox Features			_
inches) Color (moist)	<u>%</u> <u>Col</u>	or (moist)%Typ	<u>e'Loc</u> *	Texture	Remarks
-6 <u>2.5Y 3/3</u>	100			<u>si</u>	
+ 2.5Y 4/3	100			si	·
· · · · · · · · · · · · · · ·					
			<u> </u>		
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	<u> </u>				
<u> </u>					
Type: C=Concentration, D=Dep	letion, RM=Re	duced Matrix, CS=Covered or C	Coated Sand G	ains. ² Lo	cation: PL=Pore Lining, M=Matrix.
yone Soil indicators: (Applicators:		ks, unless otherwise noted.)		เกณะสน	ors for Problematic Hydric Solls":
J Histosol (A1)	Ц	Sandy Redox (S5)		∐ 2 cm	n Muck (A10)
J HISUC Epipedon (AZ)		Supped Matrix (S6)	cant MI DA 4)		Parent Material ((F2) Shellow Dork Surface (TE12)
Hydrogen Suifide (A4)		Loamy Gleved Matrix (E2)	Cept MLRA ()		r Shahow Dark Surface (1F12) ar (Evolain in Remarke)
Depleted Below Dark Surface	e(A11) □	Depleted Matrix (F3)			a tevhan ni izenare)
] Thick Dark Surface (A12)		Redox Dark Surface (F6)		³ Indicato	ors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	ū	Depleted Dark Surface (F7)		wetla	ind hydrology must be present.
Sandy Gleyed Matrix (S4)		Redox Depressions (F8)		unies	s disturbed or problematic.
estrictive Layer (if present):		······		1	
Туре:					
Depth (inches):				Used at a O a B	Present? Yes 🗋 No 🕅
emarks: Hydric soil Indicators a	re not met, chr	- oma matrix 3 is not dark and the	ere are no redo	x concentration	
Peppin (indices) lemarks: Hydric soil Indicators at /DROLOGY /ettand Hydrology Indicators:	re not met, chr	- oma matrix 3 is not dark and the	ere are no redo	x concentration	
Vettand Hydrology Indicators (minimum of o	re not met, chr	- oma matrix 3 is not dark and the neck all that apply)	ere are no redo	x concentration	ndary Indicators /2 or more required)
Vetland Hydrology Indicators a Marks: Hydric soll Indicators a Vetland Hydrology Indicators:	re not met, chr n <u>e required; ch</u>	- oma matrix 3 is not dark and the neck all that apply)	ere are no redo	x concentration	ndary Indicators (2 or more required)
Iemarks: Hydric soil Indicators a /DROLOGY /ettand Hydrology Indicators: rimary Indicators (minimum of o] Surface Water (A1)] High Water Table (A2)	re not met, chr n <u>e required; ch</u>	- oma matrix 3 is not dark and the neck all that apply) Water-Stained Leaves (BS	ere are no redo 9) (except MLF	A W	ndary Indicators (2 or more required) later-Stained Leaves (B9) (MLRA 1, 2
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WETLAND DETERMINATION DATA FORM -- Western Mountains, Valleys, and Coast Region

Project/Site: Levee Modification	City/County: <u>S</u> ł	kagit	Sampling Date:10/3/2012
Applicant/Owner: Dike District 12		State: WA	Sampling Point: DP-5
Investigator(s): Pat/Oscar, Graham-Bunting Associates	Sec	tion, Township, Range: <u>S33, T34N</u>	I, R4E
Landform (hillslope, terrace, etc.): alluvial terrace	Local relief (cr	oncave, convex, none): <u>concave</u>	Slope (%): 1
Subregion (LRR): A	Lat: <u>48 28`80"</u>	Long: N122, 17' 54.97"	Datum:
Soil Map Unit Name: <u>Sedrowoolley silt loam</u>	····_	NWI classificat	ion: emergent
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes 🔲 🛛 N	lo 🛛 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology sig	nificantly disturbed?	Are "Normal Circumstances" prese	ent? Yes 🖾 No 🗌
Are Vegetation, Soil, or Hydrology nati	urally 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? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ Yes ⊠ Yes ⊠	No 🗋 No 🗍 No 🗍	is the Sampled Area within a Wetland?	Yes 🛛	No 🗋
Remarks: end of long drought					

VEGETATION – Use scientific names of plants.

Iree Stratum (Plot size: 25.ft) % Cover Species? Status Number of Dominant Species 1
2.
4.
1.
2.
3.
4.
5.
Herb Stratum (Plot size: 5 ft) = Total Cover FACU species
Herb Stratum (Plot size: <u>5 ft</u>) UPL speciesx 5 = 1. <u>Phalaris arundinacea</u> 100 Y FACW Column Totals:(A)(B) 2
1. Phalaris arundinacea 100 Y FACW Column Totals:
2.
3. Prevalence Index = B/A = 4. Hydrophytic Vegetation Indicators: 5. Rapid Test for Hydrophytic Vegetation 6. Dominance Test is >60% 7. Prevalence Index is <3.0°
4. Hydrophytic Vegetation Indicators: 5. □ Rapid Test for Hydrophytic Vegetation 6. □ Dominance Test is >50% 7. □ Prevalence Index is ≤3.0° 8. □ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5. □ Rapid Test for Hydrophytic Vegetation 6. □ Dominance Test is >60% 7. □ Prevalence Index is ≤3.0° 8. □ Morphological Adaptations1 (Provide supporting data in Remarks or on a senatate sheet)
6. □ Dominance Test is >50% 7. □ Prevalence Index is ≤3.0 ¹ 8. □ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a senarate sheet)
7.
8 Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9 Wet/and Non-Vascular Plants'
10 Problematic Hydrophytic Vegetation ¹ (Explain)
11 1) adjectors of bydzie soil and wetland bydzology must
<u>Woody Vine Stratum</u> (Plot size:)
1 Hudrophutia
2 Vegetation
% Bare Ground in Herb Stratum = Total Cover Present? Yes 🛛 No 🗍
Remarks: Hydrophytic vegetation indicator, > 50% FAC or greater, is met.

SOIL

rome Description: Depth	Matrix			Redox	x Feature	S						
(inches) Color (moist)	%	<u>Colar (m</u>	cist)	%	Type'	Lac ²	Texture			Remark	<u>(5</u>
-4 10 YR	4/3	95	10YR 5/8	8	5	<u>_</u> C	<u>M</u>	si				
+ 2.5Y 4/	'1	100	10YR 5/8	9	10	с	м	fine sand	iyim			
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· _ · _ · _ · _ · _ · _ · _ · _ · _ · _												
	·····							_				
	tion D-Don	lation Ø		d Matrix CS				raine		tion: Di -	-Dore Lini	na M-Matrix
ivdrie Soil Indicate	ors: (Applica	able to a	ILLRRs. u	niess other	wise not	ted.)	ited Sand G	nams. Ind	icators	for Pro	biematic	Hydric Soils ³ :
	nar (Abbuo		□ San/	ty Reday (S	5)				2 cm h	Auck (A1	n 1	i gano sono :
Histic Epipedonu	(A2)		Strin	ped Matrix /	(S6)			H	Red P	arent Ma	o) teriał (TE2	n
Black Histic (A3)	(/ u.,			nv Muckv M	ineral (F	1) (excei	ot MLRA 1)		Very S	hallow D	ark Surfac	., ce (TF12)
Hydrogen Sulfide	e (A4)		🗌 Loar	ny Gleyed M	Aatrix (F2	//////////////////////////////////////			Other	(Explain	n Remark	s)
Depleted Below	Dark Surface	e (A11)	🗌 Depl	eted Matrix	(F3)	-		_		- • • •		-
] Thick Dark Surfa	ice (A12)		🛛 Red	ox Dark Sur	face (F6)			^a inc	licators	of hydro	phytic veg	jetation and
Sandy Mucky Mi	neral (S1)		🔲 Depl	eted Dark S	Surface (F	7)		•	wetland	l hydrolo	gy must b	e present,
Sandy Gleyed M	atrix (\$4)		Rede	ox Depressi	ons (F8)			ا م	uniess	disturbed	l or proble	matic.
estrictive Layer (i	f present):											
Type:												
Depth (Inches):			····					Hydric	Soil P	resent?	Yes 🖂	No 📋
			atrix i is da	ark and there	e are red	ox conce	entrations					
YDROLOGY Vetland Hydrology	Indicators		attix ti is da	ark and ther	e are red		entrations					·····
YDROLOGY Vetland Hydrology	Indicators:	nroma m	ed; check a	ark and there	e are red		entrations	5	Second	ary Indic	ators (2 or	more required)
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/DROLOGY /etland Hydrology rimary Indicators (r Surface Water (/ High Water Tabl Saturation (A3)	Indicators: ninimum of o A1) e (A2)	ne requir	ed; check	ark and there all that apply Water-Stair 1, 2, 4A Salt Crust (v) ned Leav A, and 48 (811)	es (B9) (except MLS	<u>S</u> RA [Second] Wat	ary Indic: er-Staine 4A, and 4	ators (2 or d Leaves 4B) tterns (B1)	<u>more required)</u> (B9) (MLRA 1, 2
/DROLOGY /etland Hydrology rimary Indicators (r] Surface Water (/] High Water Tab!] Saturation (A3)] Water Marks (B1	Indicators: ninimum of o A1) e (A2)	n <u>e requir</u>	ed; check	ark and there all that apply Water-Stair 1, 2, 4A Salt Crust (Aquatic Inv	v) hed Leav A, and 4E (811) ertebrate	es (B9) (i) is (B13)	except MLF	<u>\$</u> RA [Second] Wat Drai] Dry-	ary Indica er-Staine tA, and a nage Par Season	ators (2 or d Leaves 4B) tterns (B1) Water Tab	<u>more required)</u> (B9) (MLRA 1, 3 0)
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WETLAND DETERMINATION DATA FORM -- Western Mountains, Valleys, and Coast Region

Project/Site: Levee Modification	City/County: Skagit	,,,	Sampling Date: 10/3/2012
Applicant/Owner: Dike District 12		State: WA	Sampling Point: <u>DP-6</u>
Investigator(s): Pat/Oscar, Graham-Bunting Associates	Section,	Township, Range: <u>S33, T34N</u>	l, R4E
Landform (hillslope, terrace, etc.): alluvial terrace	Local relief (conca)	ve, convex, none): <u>concave</u>	Slope (%): <u>1</u>
Subregion (LRR): A Lat: 4	8 28`80"	Long: <u>N122, 17' 54.97"</u>	Datum:
Soil Map Unit Name: <u>Sedrowoolley sitt loam</u>	NWI classificati	on: emergent
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* prese	ent? Yes 🖾 No 🗌
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If nee	eded, explain any answers in	Remarks.)

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ Yes ⊠ Yes ⊠	No [] No [] No []	Is the Sampled Area within a Wetland?	Yes 🛛	No []
Remarks: end of long drought					

VEGETATION -- Use scientific names of plants.

. . . .

Absolute	Dominant Indicator	Dominance Test workshe	et:
<u>% Cover</u>	Species? Status	Number of Dominant Speci	ies
		That Are OBL, FACW, or F	AC: <u>1</u> (A)
		Total Number of Dominant	
	·	Species Across All Strata:	<u>1</u> (B)
	··· ··································		
	= Total Cover	That Are OBL_FACW_or F	es AC: 100 (A/8)
		Prevalence Index worksh	eet:
	<u> </u>	Total % Cover of:	Multiply by:
	<u> </u>	OBL species	x1=
		FACW species	x 2 =
		FAC species	x 3 =
	= Total Cover	FACU species	x 4 =
		UPL species	x 5 =
<u> 100 </u>	Y FACW	Column Totals:	(A) (B)
		Prevalence index = E	3/A =
		Hydrophytic Vegetation In	ndicators:
		Rapid Test for Hydroph	ytic Vegetation
		🛛 🖾 Dominance Test is >50	%
		Prevalence Index is ≤3.	01
	<u> </u>	🛛 🔲 Morphological Adaptatio	ons ¹ (Provide supporting
		data in Remarks or	on a separate sheet)
		U Wetland Non-Vascular	Plants'
		Problematic Hydrophyti	c Vegetation' (Explain)
100	- Tatal Causa	Indicators of hydric soil and	d wetland hydrology must
100	= Total Cover	be present, unless disturbe	d or problematic.
		Hydrophytic	
		Present? Yet M	
	= Total Cover	Tes XI	NOIL
_	= Total Cover	Fresence res	
or greater, is n	= Total Cover		i NO []
	Absolute <u>% Cover</u> 	Absolute Dominant Indicator % Cover Species? Status	Absolute Dominant Indicator Dominance Test workshe % Cover Species? Status Mumber of Dominant Speci Total Number of Dominant Speci Total Species Across All Strata: Percent of Dominant Speci Percent of Dominant Speci Total Number of Dominant Speci Total Number of Dominant Speci Total Cover Prevalence Index workshe Total % Cover of: OBL species OBL species FACW species FAC species FACU species IO0 Y FACW Column Totals: Prevalence Index = E Hydrophytic Vegetation It Rapid Test for Hydroph Dominance Test is >50 Prevalence Index is <3.

SOIL

Sampling Point: DP-6

Profile Description: (Describe to	the depth n	eeded to docu	ment the	indicator	or confirm	n the absence of indicators.)
Depth <u>Matrix</u> (inches) Color (moist)	% Cok	Redu ar (moist)	ox Feature	<u>s</u> <u>Tγpe¹</u>	Loc ²	Texture Remarks
0-4 10 YR 4/3	15 10Y	R 5/8	5	С	Μ	sl
4+ 10YR 4/1 8	10Y	R 5/8	20	с	м	fine sandvim
<u>4+ 10/1(-4/1 1</u>		11.0/0	_ 20	<u> </u>	<u>14)</u>	
		<u></u>				
·				_		
						····
	<u></u>					
lype: C=Concentration, D=Deple	tion, RM=Red	duced Matrix, C	S=Covere	d or Coat	ed Sand Gr	rains. Location; PL=Pore Lining, M=Matrix.
		Sandy Reday ((QE)	led.j		$\square 2 \text{ and } Muck (A10)$
Histosof (A1)		Stripped Matrix	(33) ((S6)			Red Parent Material (TF2)
Black Histic (A3)		Loamy Mucky	Mineral (F	i) (excep	t MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed	Matrix (F2	9	,	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) 🗌	Depleted Matri	x (F3)			
Thick Dark Surface (A12)	\boxtimes	Redox Dark Su	urface (F6)			³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark	Surface (F	-7)		wetland hydrology must be present,
Bostrictive Leves (if presently	- <u> </u>	Redox Depres	sions (F8)			unless disturbed or problematic.
Type:						
Deoth (inches):	_	-				
	ana matiu f	-				
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of on	<u>e required; ch</u>	eck all that app	oly}			Secondary Indicators (2 or more required)
Surface Water (A1)		📋 Water-Sta	uined Leav	es (B9) (e	xcept MLR	XA Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)		1, 2, 4	A, and 48	5)		4A, and 4B)
Saturation (A3)		Saft Crust	t (B11)	-		Orainage Patterns (B10)
Water Marks (B1)		Aquatic In	vertebrate	s (B13)		Dry-Season Water Table (C2)
Sediment Deposits (B2)		Hydrogen	Sulfide O	dor (C1)		Saturation Visible on Aerial Imagery (C9)
			Rhizosphe	res along	Living Root	ts (C3) [] Geomorphic Position (D2)
Algal Mat of Crust (B4)			of Reduce	ed from (C4	4) 	Shallow Aquitard (D3)
Surface Sell Cracks (BS)			on Reducti	Offin Lille) [] FAC-Neutral Test (U5)
Inundation Visible on Aerial Im	arecy (87)	D Other (Ev	r Suesseu nlain in Re	mants (D marke)	(LKK A)	Erast Hogue Hummooke (D7)
Sparsely Vegetated Concave S	Surface (B8)					
Field Observations:						
Surface Water Present? Yes	s 📋 No 🖾	Depth (inche	is):			
Water Table Present? Yes	s 🗌 No 🖾	Depth (inche	es):			
Saturation Present? Yes (includes capillary fringe)	s 🖾 No 🗌	Depth (inche	:s): <u>6"</u>		Wetla	and Hydrology Present? Yes 🛛 No 🗌
Describe Recorded Data (stream g	auge, monito	ring well, aeriał	photos, pr	evious in:	spections),	if available: long drought season, aerial obsv.
Remarke: Watand budtaland india	tore are met	Soil cohuntin				
Remarks: Wetland hydrology indic	ators are met.	Soil saturation	was prese	ent, root z	ones were	oxidized.
Remarks: Wetland hydrology indic	ators are met.	Soil saturation	was prese	ent, root z	ones were	oxidized.
Remarks: Wetland hydrology indic	ators are met.	Soil saturation	was prese	ent, root z	ones were	oxidized.

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

City/County: Skag	<u>jit</u>	Sampling Date: 10/3/2012
	State: WA	Sampling Point: <u>DP-7</u>
Sectio	n, Township, Range: <u>S33, T</u>	[34N, R4E
Local relief (cond	cave, convex, none): <u>concav</u>	ve Slope (%); 1
Lat: <u>48 28`80"</u>	Long: <u>N122, 17' 54.9</u>	9 <u>7"</u> Datum:
— <u> </u>	NWI classi	fication: emergent
ime of year? Yes 🔲 🛛 No 🛛	🛛 (If no, explain in Remark	(S.)
icantly disturbed? Ar	e "Normal Circumstances" p	oresent? Yes 🔀 No 🗌
ily problematic? (If r	needed, explain any answer	rs in Remarks.)
	City/County: <u>Skac</u> Sectio Local relief (con Lat: <u>48 28'80"</u> me of year? Yes No cantly disturbed? Ar Ily problematic? (If	City/County: <u>Skagit</u> State: <u>WA</u> Section, Township, Range: <u>S33,</u>] Local relief (concave, convex, none): <u>concar</u> Lat: <u>48 28'80"</u> Long: <u>N122, 17' 54.5</u> Local relief (concave, convex, none): <u>concar</u> Lat: <u>48 28'80"</u> Long: <u>N122, 17' 54.5</u> NVI classi me of year? Yes □ No ⊠ (If no, explain in Remark canthy disturbed? Are "Normat Circumstances" p Ily problematic? (If needed, explain any answer

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ No □ Yes ⊠ No □ Yes ⊠ No □	Is the Sampled Area within a Wetland?	Yes 🔀 No 🗔
Remarks: end of long drought			

VEGETATION – Use scientific names of plants.

	Absolute	Dominan	t Indicator	Dominance Test workshee	et:
<u>Tree Stratum</u> (Plot size: <u>25 ft</u>)	<u>% Cover</u>	Species	<u>? Status</u>	Number of Dominant Specie	s
1. <u>Thuja plicata</u>	20	<u>Y</u>	FAC	That Are OBL, FACW, or FA	AC: <u>2</u> (A)
2	·			Total Number of Dominant	
3				Species Across All Strata:	<u>2</u> (8)
4	<u>-</u> .				
	20	= Totai (Cover	Percent of Dominant Specie	18 NG: 100 (A/P)
Sapling/Shrub Stratum (Plot size: 10 ft)				That Are Obl. FACIN, OF FA	AC: <u>100</u> (AVD)
t				Prevalence Index workshe	et:
2				Total % Cover of:	Multiply by:
3				OBL species	_ x1 =
4				FACW species	_ x 2 =
5				FAC species	_ x 3 =
		= Total (Cover	FACU species	_ x 4 =
Herb Stratum (Plot size: 5 ft)				UPL species	_ x 5 =
1. Phalaris arundinacea	100	<u>Y</u>	FACW	Column Totals:	_ (A) (B)
2					
3		<u> </u>		Prevalence Index = B	/A =
4				Hydrophytic Vegetation In	dicators:
5				Rapid Test for Hydrophy	tic Vegetation
6.				🛛 🛛 Dominance Test is >509	6
7.			<u> </u>	Prevalence index is ≤3.0) ¹
8.				🔲 Morphological Adaptatio	ns ¹ (Provide supporting
9				data in Remarks or c	in a separate sheet)
10				🔲 Wetland Non-Vascular F	Plants'
11				🛛 🖸 Problematic Hydrophytic	Vegetation ¹ (Explain)
· · · · · · · · · · · · · · · · · · ·	400			Indicators of hydric soil and	wetland hydrology must
Woody Vine Stratum (Plot size:)	100	≖ iotait	Cover	be present, unless disturbed	or problematic.
1					• • • • • • •
2	<u> </u>	·		Hydrophytic	
5 .				Vegetation	N= []
% Bare Ground in Herb Stratum		= 10tał C	over	riesentr fes 🖂	
Remarks: Hydrophytic vegetation indicator, > 50% FAC or	areater, is n	net.		<u> </u>	
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · ·				

SOIL

Sampling Point: DP-7

Depth	Matrix									
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	_Loc ²	Texture		Remarks
0-15	2.5Y 3/1	85	_ <u>5YR</u>	4/6	15	<u>c</u>	<u>M</u>	<u>st, cłay lo</u>	<u></u>	
					·					·
									··.	· · · · · · · · · · · · · · · · · · ·
·							·			
<u> </u>				· · · · · · ·						
	_							· · · ·		
									· ·	····
	· · · · · · · · · · · · · · · · · · ·		<u> </u>				• • • • • • • • • •			
¹ Type: C=C	oncentration, D=De	epletion,	RM≃Rec	uced Matrix,	CS=Cover	ed or Coa	ted Sand G	rains.	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to	alí LRR	s, unless oth	nerwise no	oted.)		Indi	cators for Pr	oblematic Hydric Soils ³ :
🔲 Histosol	(A1)			Sandy Redox	(S5)				2 cm Muck (A	(10)
📋 Histic Ep	oipedon (A2)			Stripped Matri	ix (S6)				Red Parent M	aterial (TF2)
Black Hi	stic (A3)			Loamy Mucky	Mineral (I	F1) (excep	x MLRA 1)		very Shallow	Dark Surface (TF12)
Hydroge	n Sulfide (A4)			Loamy Gleyer	d Matrix (F	2)			Other (Explain	n in Remarks)
	I BEIOW DATK SUITA	ce (A11)		Depleted Mat	nx (⊨3) Surfece /EC	2)		3 ₁ -	antara at hu-	rophytic vocatation and
Sandy M	lucio: Mineral (S1)			Depleted Dark	k Surface (Fo) (E7)		104	etland bydra	logy must be present
□ Sandy G	leved Matrix (S4)			Redox Denres	ssions (F8)	(* * 7 }		• 1.	niess disturb	ed or problematic
Restrictive	Laver (if present):							1		
Type:	;,,-]		
Depth (in	ches):			-				Hudria	Rail Oreant	
iYDROLO Wetland Hy	IGY drology Indicator	<u>.</u>								<u></u>
IYDROLO Wetland Hy Primary India	GY drology Indicator cators (minimum of	s: fone reg	uired; ch	eck all that ap	pply)			s	econdary Indi	icators (2 or more required)
iYDROLO Wetland Hy Primary India	I GY drology Indicator cators (minimum of Water (A1)	s: fone req	uired; ch	eck all that ap	ορίγ) tained Lea	ves (B9) (i	except MLF		econdary Indi	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2
iYDROLO Wetland Hy Primary India □ Surface 1 □ High Wa	I GY drology Indicator cators (minimum of Water (A1) ter Table (A2)	s: fone reg	uired; ch	eck all that ap	ορίγ) tained Lea 4A, and 4	ves (89) (except MLF		econdary Indi] Water-Stair 4A. and	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2
IYDROLO Wetland Hy Primary India □ Surface I □ High Wa ⊠ Saturatic	I GY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3)	s: f one regi	uired; ch	eck all that ap Water-St 1, 2, Salt Crus	pplγ) tained Lea 4A, and 4 st (B11)	ves (B9) ((except MLF	<u>S</u> RA [econdary Indi] Water-Stair 4A, and] Drainage P	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 1 48) latterns (B10)
Image: Arrow of the second system	IGY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)	s: fone req	<u>uired; ch</u>	eck all that ap	pplγ) tained Lea 4 A, and 4 st (B11)	ves (B9) (B)	except MLF		econdary Indi Water-Stair 4A, and Drainage P Dry-Season	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 † 48) Patterns (B10) n Water Table (C2)
Image: Application of the second state of the second st	I GY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)	s: fone regi	uired; ch	eck all that ap Water-St 1, 2, Salt Crus Aquatic I	tained Lea 4A, and 4 st (B11) Invertebrat	ves (B9) (B) 2dor (C1)	except MLF	<u>S</u> RA []	econdary Indi Water-Stain 4A, and Drainage P Dry-Season Saturation	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 i 48) latterns (B10) n Water Table (C2) Visible on Aerial Imagery (C
iYDROLO Wetland Hy Primary India Surface 1 High Wa Saturatic Water M Sedimen Drift Dep	IGY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) tt Deposits (B2) posits (B3)	s: f one reg	uired; ch	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroger	tained Lea 4 A, and 4 st (B11) Invertebrat n Sulfide C	ves (B9) (B) Ddor (C1) eres alono	except MLF		econdary Indi] Water-Stair 4A, and] Drainage P] Dry-Season] Saturation] Geomorphi	icators (2 or more required) hed Leaves (B9) (MLRA 1, 2 1 4B) hatterns (B10) h Water Table (C2) Visible on Aerial Imagery (Ci c Position (D2)
IYDROLO Wetland Hy Primary India Surface I High Wa Saturatic Water M Sedimen Drift Dep Algal Ma	IGY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4)	s: fone reg	uired; ch	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroget X Oxidized	bolγ) tained Lea 4A, and 4 st (B11) Invertebrat n Sulfide C I Rhizosph e of Reduc	ves (B9) (B) 2dor (C1) eres along ced iron (C	Except MLF		econdary Indi Water-Stain 4A, and Drainage P Dry-Season Saturation Saturation Shallow An	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 4 48) atterns (B10) n Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3)
IYDROLO Wetland Hy Primary India Surface I High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep	IGY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) sosits (B3) t or Crust (B4) osits (B5)	s: fone req	<u>uired; ch</u>	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized Presence	bolγ) tained Lea 4A, and 4 st (B11) Invertebrat In Sulfide C I Rhizosph e of Reduc ron Reduc	ves (B9) (B) 2dor (C1) eres along ced iron (C tion in Tille	Except MLF Living Roo (4) ed Soils (C6		econdary Indi Water-Stain 4A, and Drainage P Dry-Season Saturation Saturation Geomorphi Shallow Aq FAC-Neutra	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 1 48) Patterns (B10) n Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3) al Test (D5)
iYDROLO Wetland Hy Primary India Surface I High Wa Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep Surface I	IGY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	s: fone req	uired; ch	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroget Oxidized Presence Recent In Stunted of	tained Lea 4A, and 4 st (B11) Invertebrat n Sulfide C Rhizosph e of Reduc ron Reduc or Stresse	ves (B9) (B) Ees (B13) Odor (C1) eres along red iron (C tion in Tille d Plants (I	Except MLF Living Roo 4) ed Soils (C6 D1) (LRR A)	Ts (C3)	econdary Indi 4A, and Drainage P Dry-Season Saturation Saturation Shallow Aq FAC-Neutra Reised Ant	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 t 48) Patterns (B10) n Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3) al Test (D5) Mounds (D6) (LRR A)
iYDROLO Wetland Hy Primary India Surface I High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface I Inundatic	IGY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial	s: f one req Imagery	<u>uired; ch</u>	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydrogei Oxidized Presence Recent II Stunted of Other (E:	tained Lea 4A, and 4 st (B11) nvertebrat n Sulfide C Rhizosph e of Reduc ron Reduc or Stresse xplain in R	ves (B9) (B) 2dor (C1) eres along eres along tion in Tilk d Plants (I emarks)	Except MLF Except MLF (4) Ed Soils (C6 (1) (LRR A)		econdary Indi 4A, and Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutra Reised Ant Frost-Heav	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 4 4B) latterns (B10) n Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3) al Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
IYDROLO Wetland Hy Primary India Surface I High Wa Saturation Water M Sediment Drift Dep Algal Ma Iron Dep Surface I Inundation Sparsely	IGY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial	s: fone regi lmagery ve Surfac	<u>uired; ch</u> (B7) e (B8)	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted o Other (E:	tained Lea 4 A, and 4 st (B11) Invertebrat n Sulfide C Rhizosph e of Reduc ron Reduc or Stresse xplain in R	ves (B9) (B) 2dor (C1) eres along red iron (C tion in Tille d Plants (I emarks)	Except MLF Except MLF d Soils (C6 D1) (LRR A)		econdary Indi 4A, and Drainage P Dry-Season Saturation Saturation Geomorphi Shallow Aq FAC-Neutra Raised Ant Frost-Heav	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 4 48) fatterns (B10) n Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3) al Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
IYDROLO Wetland Hy Primary India Surface I High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface I Inundatic Sparsely	drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) to r Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concar vations:	s: fone required Imagery ve Surfac	(B7) e (B8)	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroget Oxidized Presence Recent II Stunted of Other (E:	bolγ) tained Lea 4A, and 4 st (B11) Invertebrat n Sulfide C Rhizosph e of Reduc ron Reduc or Stresse xplain in R	ves (B9) (B) 2dor (C1) eres along red iron (C tion in Tille d Plants (I emarks)	Except MLF Except MLF ed Soils (C6 D1) (LRR A)	ts (C3)	econdary Indi Water-Stain 4A, and Drainage P Dry-Season Saturation Saturation Geomorphi Shallow Aq FAC-Neutra Raised Ant Frost-Heav	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 4 48) latterns (B10) n Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3) al Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
IYDROLO Wetland Hy Primary India Surface I High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface I Inundation Sparsely Field Obser	IGY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) to Deposits (B2) sosits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aertal Vegetated Concar vations: er Present?	s: fone required Imagery ve Surfac	uired; ch (B7) re (B8) No ⊠	eck all that ap Water-St U Water-St Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted of Other (E: Depth (inch	<u>eplγ)</u> tained Lea 4A, and 4 st (B11) Invertebrat n Sulfide C I Rhizosph e of Reduc ron Reduc or Stresse xplain in R ess):	ves (B9) (B) eres (B13) Odor (C1) eres along red iron (C tion in Tillk d Plants (I lemarks)	Except MLF Living Roo (4) Ed Soils (C6 D1) (LRR A)	Ts (C3)	econdary Indi Water-Stain 4A, and Drainage P Dry-Season Saturation Saturation Geomorphi Shallow Aq FAC-Neutra Reised Ant Frost-Heav	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 1 48) Patterns (B10) In Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3) al Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
IYDROLO Wetland Hy Primary India Surface I High Wa Saturation Drift Dep Algal Ma Iron Dep Surface I Inundation Sparsely Field Obser Surface Water Table	IGY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concat vations: er Present? Present?	s: fone required Imagery ve Surface Yes [] Yes []	uired; ch (B7) re (B8) No ⊠ No ⊠	eck all that ap Water-St 1, 2, Salt Crus Aquatic I Hydrogei Oxidized Presence Recent II Stunted o Other (E: Depth (inch	pplγ) tained Lea 4A, and 4 st (B11) nvertebrat n Sulfide C Rhizosph e of Reduc ron Reduc or Stresser xplain in R es): es):	ves (B9) (B) res (B13) Odor (C1) eres along red iron (C tion in Tills d Plants (I remarks)	Except MLF Except MLF d Soils (C6 D1) (LRR A)	S RA [[[] []]]]]]]]]]]]]]]	econdary Indi 4A, and Drainage P Dry-Season Saturation Saturation Shallow Aq FAC-Neutra Raised Ant Frost-Heav	icators (2 or more required) ned Leaves (B9) (MLRA 1, 2 t 48) Patterns (B10) n Water Table (C2) Visible on Aerial Imagery (C c Position (D2) uitard (D3) al Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
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Wetland Rating Forms

Attachment D

Wetland name or number A

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats
Name of wetland (if known): $DD - 12$ Date of site visit: $10 - 3 - 2012$
Rated by Part Banting Trained by Ecology? Yes No Date of training May do
SEC: 33 TWNSHP: 350KNGE: 4E Is S/T/R in Appendix D? Yes NoX
Map of wetland unit: Figure <u>C</u> Estimated size <u>3900</u> 54
SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

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

TOTAL score for Functions

	0
	7
	9
2	6

Category based on SPECIAL CHARACTERISTICS of wetland

I____ II___ Does not Apply A

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



Summary of basic mitrimation about the wettand unit							
Estuarine	Depressional 🔀						
Natural Heritage Wetland	Riverine						
Bog	Lake-fringe						
Mature Forest	Slope						
Old Growth Forest	Flats						
Coastal Lagoon	Freshwater Tidal						
Interdunal							
None of the above	Check if unit has multiple HGM classes present						

1

Summary of basic information about the wetland unit

Wetland name or number

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

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

and a second	****
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?	X
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?	
For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).	x
SP3 . Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	×
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X

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

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

August 2004

Classification of Wetland Units in Western Washington

At the spill relastic entertainted in each question to not apply to the entire unit being a struct, you grobably have a unit with multiple HGM classes. In this case, identify which apply slopic criticity in quastions 1-1 goply, and go to Question 8.

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

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

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

- 2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
 - $\overline{NO} \rightarrow go to 3$

YES – The wetland class is Flats

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

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

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

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

Wetland name or number $\underline{\mathcal{H}}$

- 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 6 YES – The wetland class is Riverine

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

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

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

NO - go to 8 YES - The wetland class is Depressional

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

still the second state of the s	
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
	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.

Ð	Man Dig Charles and Charles an	24 min fe
1999 - A.		
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure 🧘
-	Unit is a depression with no surface water leaving it (no outlet) $points = 3 - 3$	
$ \mathbf{D} $	Unit has an intermittently flowing, OR highly constructed permanently flowing outlet points = 2 Unit has an unconstructed, or glightly constructed surface outlet (normanently flowing) points = 1	
	Unit is a "flat" depression (0, 7 on key) or in the Flats class with permanent surface outflow and	2
	no obvious natural outlet and/or outlet is a man-made ditch points = 1	
ł	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	Provide photo or drawing	
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS	
D	aefinitions) VES points = 4	
	NO points = 0	\bigcirc
	D 1.3 Characteristics of persistent vegetation (emergent shrub and/or forest Cowardin class)	Figure
	Wetland has persistent, ungrazed, vegetation $> = 95\%$ of area points = 5	
$ \mathbf{D} $	Wetland has persistent, ungrazed, vegetation $> = 1/2$ of area points = 3 -	
	Wetland has persistent, ungrazed vegetation $> = 1/10$ of area points $= 1$	X
	Wetland has persistent, ungrazed vegetation $<1/10$ of area points = 0	e e
	Map of Cowardin vegetation classes	Figures
	D1.4 Unaracteristics of seasonal ponding or infundation. This is the area of the welland unit, that is nonded for at least 2 months, but dries out	rigure
\mathbf{D}	sometime during the year. Do not count the area that is permanently nonded. Estimate	
	area as the average condition 5 out of 10 vrs.	
	Area seasonally ponded is $> \frac{1}{2}$ total area of wetland points = 4	
	Area seasonally ponded is $> \frac{1}{4}$ total area of wetland points = 2	4
	Area seasonally ponded is $< \frac{1}{4}$ total area of wetland points = 0	
	Map of Hydroperiods	
D	Total for D 1 Add the points in the boxes above	10
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water	
[]	coming into the wetland that would otherwise reduce water quality in streams, lakes or	
	provide the sources of pollutants. A unit may have pollutants coming from several	
	sources, but any single source would qualify as opportunity.	
	— Grazing in the wetland or within 150 ft	
	 Untreated stormwater discharges to wetland 	
	 Tilled fields or orchards within 150 ft of wetland 	
	 A stream or culvert discharges into wetland that drains developed areas, residential areas, 	
	Iarmed fields, roads, or clear-cut logging — Residential uthan areas, golf courses are within 150 ft of wetland	multiplier
	- Wetland is fed by groundwater high in phosphorus or nitrogen	Inturnpher
	Other	1_
	YES multiplier is 2 NO multiplier is 1	
$ \mathbf{D} $	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2	10
	Add score to table on p. 1	

Wetland name or number \underline{A}

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

Wetland Rating Form – western Washington6version 2Updated with new WDFW definitions Oct. 2008

August 2004

Wetland name or number A

These substitutes apply as a clouds of all the	Medanies and an antises and an	Points points period
H 1. Does the wetland unit have the <u>potential</u> to p	rovide habitat for many species?	
H 1.1 Vegetation structure (see p. 72)		Figure
Check the types of vegetation classes present (as define	d by Cowardin)- Size threshold for each	}
class is 74 acre or more than 10% of the area if unit	is smaller than 2.5 acres.	
Emergent nlants		
Scrub/shrub (areas where shrubs have >30%	o cover)	1
Forested (areas where trees have >30% cove	r)	
If the unit has a forested class check if:		1
The forested class has 3 out of 5 strata (can	opy, sub-canopy, shrubs, herbaceous,	
moss/ground-cover) that each cover 20%	within the forested polygon	
Add the number of vegetation structures that qualify. I	t you have:	1
	4 structures or more $points = 4$	
Map of Cowardin vegetation classes	3 structures points = 1	
	2 structure points = 0	
H 1.2, Hydroperiods (see p. 73)		Figure
Check the types of water regimes (hydroperiods) pl	resent within the wetland. The water	
regime has to cover more than 10% of the wetland o	r ¼ acre to count. (see text for	
descriptions of hydroperiods)		
Permanently flooded or inundated	4 or more types present $points = 3$	
Seasonally flooded or mundated	3 types present points = 2	
Occasionally flooded of inundated	2 types present $point = 1$	
Permanently flowing stream or river in or ad	iscent to the wetland	
Seasonally flowing stream in, or adjacent to t	the wetland	
$\frac{1}{Lake-fringe wetland} = 2 \text{ points}$		
Freshwater tidal wetland = 2 points	Map of hydroperiods	
H 1.3. Richness of Plant Species (see p. 75)		
Count the number of plant species in the wetland th	hat cover at least 10 ft ² . (different patches	e
of the same species can be combined to meet the size	ze threshold)	
You do not have to name the species.		
Do not include Eurasian Milfoil, reed canarygr	ass, purple loosestrife, Canadian Thistle	2
If you counted:	> 19 species points = 2	
Lisi species below if you want to.	5 = 19 species points = 1	
	< 5 species points = 0 -	
		}
		1
h		
	Total for	page (🖊

Wetland Rating Form - western Washington13version 2Updated with new WDFW definitions Oct. 2008

August 2004



Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers (see p. 80)	Figure (
Choose the description that best represents condition of buffer of wetland unit. The highest scoring	
criterion that applies to the wetland is to be used in the rating. See text for definition of	
"undisturbed."	
 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference, Points = 3 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, Points = 3 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, Points = 3 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, Points = 3 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3 	2
If Duffer does not meet any of the criteria above No neved areas (event neved trails) or buildings within 25 m (80ft) of wetland > 95%	\sim
\sim No paved areas (except paved trans) of buildings within 25 m (801) of weithin $\sim 95\%$	
\sim No paved areas or buildings within 50m of wetland for >50% circumference	
= 100 paved areas or buildings whilm som of we have $100 > 50%$ encumerence. Light to moderate grazing or lawns are OK Points = 2	
- Heavy orazing in buffer Points = 1	
\sim Vegetated buffers are $<2m$ wide (6.6ft) for more than 95% of the circumference (e.g. tilled	
fields naving basalt bedrock extend to edge of wetland $Points = 0$	
— Buffer does not meet any of the criteria above Points = 1	
Aerial photo showing buffers	
H 2.2 Corridors and Connections (see p. 81)	
H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest	
or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed	
uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel	
roads, paved roads, are considered breaks in the corridor).	
$YES = 4 \text{ points} (go \text{ to } H 2.3) \qquad NO = go \text{ to } H 2.2.2$	
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or	
forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25	
acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in	
the question above?	
$YttS = 2 \text{ points } (go to H 2.3) \qquad \text{NO} \approx H 2.2.3$	/
H $Z_{1}Z_{1}$ is the wetland:	1
within 5 mi (8km) of a brackish of sait water estuary UK	سلب
within 5 m of a large field or pastific (>40 acres) OK	
when μ and μ or a max greater than 20 acres?	
	L

Total for page _____

i

Wetland Rating Form – western Washington 15 version 2 Updated with new WDFW definitions Oct. 2008 August 2004

	,
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in	
the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	i
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various	
species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree	
species forming a multi-levered canony with occasional small openings; with at least 20	
species, forming a mani-layer to canopy with occasional small openings, with at least 20 trace/hp (8 trace/hore) > 81 pm (22 in) dbh or > 200 traces of ago. (Mature forests) Stands	
$(32 \text{ m})^2 = 31 \text{ cm}(32 \text{ m}) \text{ unit} (32 \text{ m}) \text{ defines of age.} (1) \text{ and } 1000 sectors of a sector sector sectors of a sector sect$	i }
with average maineters exceeding 53 cm (21 in) don, crown cover may be less that 100%;	1
crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of	
large downed material is generally less than that found in old-growth; 80 - 200 years old	{ }
west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	l l
canopy coverage of the oak component is important (full descriptions in WDFW PHS	
report p. 158).	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the	
form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	
Instream: The combination of physical, biological, and chemical processes and conditions	
that interact to provide functional life history requirements for instream fish and wildlife	
resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore.	
Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the	
definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in	
Annendix A)	
Caves: A naturally occurring cavity recess youd or system of interconnected passages under	
the earth in soils rock ice or other geological formations and is large enough to contain a	
human	i I
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft	[]
Talues Homogenous areas of rock rubble ranging in guerage size 0.15 - 2.0 m (0.5 - 6.5.8)	
annos riolitogenous areas or rock rubble ranging in average size 0.15 - 2.0 in (0.5 - 0.5 il),	
tailings. May be associated with sliffs	l
anings. What be associated with only.	{ }
	{
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a]]
1 unameter at oreast neight of > 51 cm (20 m) in western wasnington and are > 2 m (6.5 ft) in	
neight. Priority logs are > 30 cm (12 m) in diameter at the largest end, and > 6 m (20 ft)	1
long.	
It wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	}
Note: All vegetated wetlands are by definition a priority habitat but are not included in this	[]
list. Nearby wetlands are addressed in question H 2.4)	

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84) There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile, BUT the connections between them are disturbed The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile There is at least 1 wetland within ½ mile. There are no wetlands within ½ mile. points = 0	3
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 14	1
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	9

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type Check off any criteria that apply to the wetland. Circle the Category when the	Category
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
 The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt 	
$\frac{1}{\text{YES}} = \text{Go to SC } 1.1 \text{ NO}$	
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?	Cat. I
YES = Category I NO go to SC 1.2	
 SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category 1 NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Sparting spn. are the only species that cover 	Cat. I Cat. II
more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the	Dual rating
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	1/11
At least ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of	
- The wetland has at least 2 of the following features: tidal channels.	
depressions with open water, or contiguous freshwater wetlands.	

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

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 SC 4.0 Forested Wetlands (see p. 90) Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its functions. Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. 	
NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	
YES = Category I NQ not a forested wetland with special characteristics	Cat, I
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
 Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) YES = Go to SC 5.1 NO not a wetland in a coastal lagoon 	
 SC 5.1 Does the wetland meets all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of 	
shrub, forest, or un-grazed or un-mowed grassland.	Cat. I
- The wetland is larger than 1/10 acre (4350 square feet)	Cat II
I ES = Calegory I NO = Calegory II	

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NOX not an interdunal wetland for rating	(
If you answer yes you will still need to rate the wetland based on its	
functions.	
In practical terms that means the following geographic areas:	{
 Long Beach Peninsula- lands west of SR 103 	
 Grayland-Westport- lands west of SR 105 	
 Ocean Shores-Copalis- lands west of SR 115 and SR 109 	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cat II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
YES = Category III	Cat. III
Category of svetland based on Special Characteristics (Choose the Flaghest" rating if welland falls into several categories, and second on	XIA
P.4 If you answered NO for all types enter "Not Applicable" on p.1	1701

Caller and the second second

Wetland name or number

WETLAND RA Version 2 - Updated July 2 Updated Oct 20	FING FORM – W 006 to increase accura 08 with the new WDF	ESTERN WASI cy and reproducibility W definitions for pri	HINGTON ty among users ority habitats	8-20-2012
Name of wetland (if known):)-12	D	ate of site visi	t:10-3-2012
Rated by Pat Bunting	Trained by	Ecology? YesX	No Date of	of training May 06
SEC: <u>4</u> TWNSHP: <u>344</u> /RNGE: <u>4</u>	街 Is S/T/R in A	ppendix D? Yes_	No <u>X</u>	
Map of wetland un	it: Figure <u></u>	Estimated siz	ze <u>25,2</u> 51 Mosfi	AC VC_
SU	MMARY OF	RATING		
Category based on FUNCTIO	NS provided by	y wetland		
				_
Note: Wetland is CATEGORY:	I BASED ON	I SPECIAL CHP	HRACTERIST	105
$\Box_{\text{Category } I = \text{Score} > -70}$	Score	or Water Quality	Functions	22
Category II = Score $51-69$	Sco	re for Hydrologic	Functions	IR
Category III = Score 30-50		Score for Habitat	Functions	an
Category IV = Score < 30	. To	OTAL score for	Functions	68
71			L	<u>v</u> Q
Category based on SPECIAL	CHARACTER	ISTICS of we	tland	

I I Does not Apply___

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



Maland Initerin Succinger			
Estuarine	ļ	Depressional	\mathbb{X}
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest	X	Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above		Check if unit has multiple HGM classes present	X

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Summary of basic information about the wetland unit

Wetland name or number

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

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

SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	\times	
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? PAS For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).	χ	
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	\times	
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X	

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

The hydrogeomorphic classification groups wetlands 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

A REAL PROPERTY AND A REAL AND ADDRESS FOR THE AND ADDRESS OF A STREET, AND ADDRESS ADDRES ADDRESS Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO - go to 2YES - the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.). **2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit. $(NO \neq go to 3)$ YES - The wetland class is Flats If your wetland can be classified as a "Flats" wetland, use the form for Depressional wetlands. 3. Does the entire wetland unit meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size; At least 30% of the open water area is deeper than 6.6 ft (2 m)? YES – The wetland class is Lake-fringe (Lacustrine Fringe) NO - go to 44. Does the entire wetland unit meet all of the following criteria? The wetland is on a slope (slope can be very gradual), The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks. The water leaves the wetland without being impounded? NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep). NO $\frac{1}{2}$ go to 5 **YES** – The wetland class is Slope

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

 \times The unit is in a valley, or stream channel, where it gets inundated by overbank

flooding from that stream or river

 \times The overbank flooding occurs at least once every two years.

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

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

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time 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 matural outlet.

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

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

will all a compared that micro-elimit state being rened	HIGM Class to Lise in Raing
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary 🖌	Depressional X
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.

Wetland name or number _____

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D	Depressional and Clain Wellands 2008	Polnie
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	D 1.1 Characteristics of surface water flows out of the wetland: points = 3 Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") points	Figure <u>a</u>
	Provide photo or drawing	
D	S 1.2 The solid 2 inches below the surface (or dult layer) is clay of organic (use NRCS definitions) YES NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)	Figure
D	Wetland has persistent, ungrazed, vegetation > = 95% of areapoints = 5Wetland has persistent, ungrazed, vegetation > = 1/2 of areapoints = 3Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0	5
	Map of Cowardin vegetation classes	
D	This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.	, igui e
	Area seasonally ponded is > $\frac{1}{2}$ total area of wetlandpoints = 4Area seasonally ponded is > $\frac{1}{4}$ total area of wetlandpoints = 2Area seasonally ponded is < $\frac{1}{4}$ total area of wetlandpoints = 0	4
	Total for D 1 Add the points in the boxes above	
D	Add the points in the boxes above	┇▃▁┥╌┙╼┙
D	 D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. X Grazing in the wetland or within 150 ft − Untreated stormwater discharges to wetland X Tilled fields or orchards within 150 ft of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft of wetland − Wetland is fed by groundwater high in phosphorus or nitrogen Other	(see p. 44) multiplier
	Add score to table on p. 1	22

Wetland name or number ______

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - indicators that the worked unit functions to esduce flooding and aream degradation	Points and tenso
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D	D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 V Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted or slightly constricted surface outlet (permanently flowing) points = 0	4
D	D 3.2 Depth of storage during wet periodsEstimate the height of ponding above the bottom of the outlet. For units with no outletmeasure from the surface of permanent water or deepest part (if dry).Marks of ponding are 3 ft or more above the surface or bottom of outletpoints = 7The wetland is a "headwater" wetland"Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletunit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trapwaterwaterMarks of ponding less than 0.5 ft	5
D	D 3.3 Contribution of wetland unit to storage in the watershedEstimate the ratio of the area of upstream basin contributing surface water to the wetlandto the area of the wetland unit itself.The area of the basin is less than 10 times the area of unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire unit is in the FLATS classpoints = 5	0
D	Total for D 3Add the points in the boxes above	9
D	 D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. − Wetland is in a headwater of a river or stream that has flooding problems ★ Wetland drains to a river or stream that has flooding problems ★ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems ✓ Other YES multiplier is 2 NO multiplier is 1 	(see p. 49) multiplier
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	18
	Add score to table on p. 1	

e these merubate and that is sharily of all the means the second state of the second state of the second state	Mr. Bostow A Maria	in a sec	Pointer
H 1. Does the wetland unit have the <u>potential</u> to p	rovide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72)	······································		Figure
Check the types of vegetation classes present (as define	d by Cowardin)- Size thresh	old for each	
class is 4, acre or more than 10% of the area if unit	is smaller than 2.5 acres.		
$\underline{\qquad} Aquatic bed \qquad 4 \ln \frac{1}{6}$			
Emergent plants			
Scrub/shrub (areas where shrubs have >30%	cover)		
Forested (areas where trees have $>30\%$ cove	т)		
If the unit has a forested class check if:			
The forested class has 3 out of 5 strata (cano	opy, sub-canopy, shrubs, her	baceous,	
moss/ground-cover) that each cover 20%	within the forested polygon		
Add the number of vegetation structures that qualify. If	you have:		4
	4 structures or more	points = 4	ł
Map of Cowardin vegetation classes	3 structures	points = 2	
	2 structures	points = 1	
	1 structure	points = 0	
H 1.2. <u>Hydroperiods (see p. 73)</u>	, sats at at Tra-	7	rigure
Check the types of water regimes (hydroperiods) pr	esent within the welland. 1	he waler	
regime has to cover more than 10% of the welland o	r ¼ acre lo count. (see lext f	or	} .
aescriptions of hydroperiods)	4		
Permanently flooded or inundated	4 or more types present	points = 3	+
Seasonally flooded or inundated	3 types present	points = 2	2
Uccasionally flooded or inundated	2 types present	point = 1	
Saturated only	i type present	points = 0	
Permanently flowing stream or river in, or adj	acent to, the wetland		
Seasonally howing stream in, or adjacent to, t	ne wetland		
Luke-jringe weiland – 2 points	free of budge	motioda	
Presh water talat wettana – 2 points		perious	
H 1.3. <u>Richness of Plant Species</u> (see p. 75)	· · · · · · · · · · · · · · · · · · ·		,
Count the number of plant species in the wetland th	at cover at least 10 ft ² . (diff	erent patches	
of the same species can be combined to meet the siz	e threshold)		
You do not have to name the species.		le mai e d	
Do not include Eurasian Milfoll, reed canarygr	ass, purple loosestrife, Can	adian Thistle	
If you counted:	> 19 species	points = 2	
List species below if you want to:	5 - 19 species	points = 1	$\left \right\rangle$
	< 5 species	points = 0	4
			, ,
	······································	· · ·	0
		Total for p	age 🕖 👘



Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2 1 Buffers (see p. 80)	Figure
Choose the description that best represents condition of buffer of wetland unit. The highest scoring	
criterion that applies to the wetland is to be used in the rating. See text for definition of	
"undisturbed."	
- 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	· .
of circumference. No structures are within the undisturbed part of buffer. (relatively	
undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5	
-100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water $> 1/2$	9
50% circumference. Points = 4	
- 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	
circumference. Points = 4	
-100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25%	
circumference. Points = 3	
— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >	
50% circumference. Points = 3	
If buffer does not meet any of the criteria above	
— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95%	
circumference. Light to moderate grazing, or lawns are OK. Points = 2	
— No paved areas or buildings within 50m of wetland for >50% circumference.	
Light to moderate grazing, or lawns are OK. Points = 2	-
- Heavy grazing in buffer. Points = 1	
— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled	
fields, paving, basalt bedrock extend to edge of wetland $Points = 0$.	
- Buffer does not meet any of the criteria above. Points = 1	
Aerial photo showing buffers	
H 2.2 Corridors and Connections (see p. 81)	
H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest	
or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed	
uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel	
roads, paved roads, are considered breaks in the corridor)	
$YES = 4 \text{ points} (go to H 2.3) \qquad (NO \neq go to H 2.2.2)$	1
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian) or upland) that is at least 50ff wide, has at least 30% cover of shrubs or	$ \gamma $
forest, and connects to estuaries, other wetlands or undisturbed upkands that are at least 25.	A
acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in	
the question above,	
V = 1222 points (go to H 2.3) $NO = H 2.2.3$	
n 2.2.3 Ishire within 5 mi (from) of a breakish or calt water action. OD	
within 3 mi of a large field or perture (>40 acres) OP	
within 1 mi of a lake greater than 20 acres?	
VFS = 1 point	
	L
Total for	page_(0



	*
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in]
the PHS report http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various	
species of native fish and wildlife (full descriptions in WDEW PHS report p. 152)	
Harbaccous Balde: Variable size patches of grass and forbs on shallow soils over bedrock	
V Old growth Mature forest: (Old-growth west of Cascade crest) Stands of at least 2 tree	!
x Ou-growthe with inverse concerned canony with accessional small openings; with at least 20	
species, forming a minimary or discussion of species, which a reast 20	
$\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{10000}$ $\frac{1}{10000000000000000000000000000000000$	
with average maneters exceeding 55 cm (21 m) don, crown cover may be less that 100%,	
crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of	
large downed material is generally less than that found in old-growth, 80 - 200 years old	
west of the Cascade crest.	
Uregon white Uak: woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component is important (<i>jull descriptions in WDF W PHS</i>	-
report p. 158).	
\mathbf{N} Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the	
form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	
Instream: The combination of physical, biological, and chemical processes and conditions	
that interact to provide functional life history requirements for instream fish and wildlife	
resources.	1
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore,	
Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the	[
definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in	
Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under	
the earth in soils, rock, ice, or other geological formations and is large enough to contain a	
human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	1
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	$ \Lambda $
tailings. May be associated with cliffs.	4
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient	e l
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a	
diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in	
height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft)	
long.	
If wetland has 3 or more priority habitats \neq 4 points	
If wetland has 2 priority habitats = 3 points]
If wetland has 1 priority habitat = 1 noint No habitats = 0 points	1
Note: All vegetated wetlands are by definition a priority habitat but are not included in this	
list. Nearby wetlands are addressed in question H 2 4)	
	A.,

There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 • The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3 • The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	3
Add the scores from H2.1,H2.2, H2.3, H2.4	3
TOTAL for H 1 from page 14	15
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	28



CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the	
SC 1.0 Estuaring wetlands (see n. 86)	···
SC 1.0 Estuarme wetlands (see p. 00)	
Does the wehand unit meet the following chiena for Estuarme wehands?	
The dominant water regime is tidal,	
- vegetated, and With a solution groater than 0.5 and	
$\frac{-\text{ with a satisfy greater than 0.5 ppt.}}{\text{YES} = \frac{\text{Go to SC 1.1}}{\text{NO }}$	
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?	Cat. I
YES = Category I NO go to SC 1.2	
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II	Cat. I
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant	Cat, II
species. If the non-native Spartina spp. are the only species that cover	
more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the	Dual rating
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in	1/11
determining the size threshold of 1 acre.	
- At least ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of	
snrub, forest, or un-grazed or un-mowed grassland.	
The weitahu has at least 2 of the following features: tidal channels, depressions with open water, or continuous freshwater wetlands	
depressions with open water, or contiguous restiwater wenalids.	
500 × 2400 = 25.5 acres,	

LEVEE	
	weithin the start and the start of a log
Wetland Rating Form – western Was version 2 Updated with new WDFW	hington 18 definitions Oct. 2008

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

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

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

