REVISED REPORT WETLAND AND STREAM DELINEATION PACIFIC NORTHWEST SALMON CENTER SITE BELFAIR, WASHINGTON

OCTOBER 10, 2007

FOR PACIFIC NORTHWEST SALMON CENTER



# Wetland and Stream Delineation File No. 16264-001-01

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# TABLE OF CONTENTS

INTRODUCTION	
PROJECT LOCATION	
PROJECT DESCRIPTION	
PROJECT SCOPE	2
METHODS	2
PAPER INVENTORY	2
FIELD DELINEATION	2
STREAM CLASSIFICATION	4
WETLAND PARAMETERS	
Hydrophytic Plants	5
Hydric Soils	
Hydrology	
WETLAND EVALUATION	
Wetland Classification and Categorization Assessment	
Wetland Functional Assessment	
WETLAND HYDROLOGY MONITORING	
RESULTS	-
	-
SITE DESCRIPTION AND EXISTING CONDITIONS	-
WETLAND HYDROLOGY MONITORING	12
STREAM CLASSIFICATION AND EVALUATION	13
STREAM PARAMETERS	13
Stream Classification	13
WETLAND CATEGORIZATION AND EVALUATION	13
WETLAND PARAMETERS	
Wetland A	
Wetland B	
Wetland C.	
Wetland D.	-
Wetland E	-
Wetland F	
Wetland G	
Wetland H	
Wetland I	
Wetland J	
Wetland K	
Wetland L.	
Wetland M.	
Wetland N.	
Wetland O	
Wetland P	
Wetland Q	
Wetland R	

# TABLE OF CONTENTS (CONTINUED)

Page	No.
------	-----

Wetland S	
Wetland T	
Wetland U	
Wetland V	
Wetland W	-
Wetland X	
WETLAND EVALUATION	
Wetland Characterization	
Wetland Functional Assessment	
Wetland A-1	
Wetland A-2	
Wetland A-3	
Wetland A-4	27
Wetland A-5	
Wetland B	
Wetland C	
Wetland D	
Wetland E	
Wetland F	
Wetland G	
Wetland H	31
Wetland I	31
Wetland J	
Wetland K	
Wetland L	
Wetland M	
Wetland N	
Wetland O	
Wetland P	
Wetland Q	
Wetland R	
Wetland S-1	
Wetland S-2	
Wetland T	
Wetland U	
Wetland V	
Wetland W	
Wetland X	
CONCLUSIONS	
LIMITATIONS	
REFERENCES	

# TABLE OF CONTENTS (CONTINUED)

#### Page No.

#### List of Tables

Table 1.	Fish and Wildlife Conservation Area Development Standards	. 5
	Ratings of Impact from Land Uses	
	Wetland Categories and Buffers	
Table 4.	Shallow Groundwater Monitoring Wells Hydrology1	12
Table 5.	Stream Classification 1	13
Table 6.	Categorization of Wetland Features	<u>2</u> 4

#### Figures

Figure 2. Streams and Wetland Map

Figure 3. Soil Survey Map

#### APPENDICES

APPENDIX A – SITE PHOTOGRAPHS APPENDIX B – SITE MAPS APPENDIX C – WETLAND DATA SHEETS APPENDIX D – SHALLOW GROUNDWATER WELL MONITORING DATA APPENDIX E – WETLAND RATING FORMS



## REVISED REPORT WETLAND AND STREAM DELINEATION PACIFIC NORTHWEST SALMON CENTER SITE BELFAIR, WASHINGTON FOR PACIFIC NORTHWEST SALMON CENTER

#### INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) was contracted by the Pacific Northwest Salmon Center (PNSC) to perform wetland and stream delineation services at the proposed PNSC property in Belfair, Washington. Twenty-nine wetland features and one stream feature were identified and delineated within the property boundary. GeoEngineers evaluated and categorized wetland and stream features on the property in general accordance with Mason County Resource Ordinance (MCRO) 17.01.040-Fish and Wildlife Habitat Conservation Areas and MCRO 17.01.070-Wetlands. Shallow groundwater data was collected to determine positive wetland hydrology in areas that are disturbed by agricultural activities.

#### **PROJECT LOCATION**

The project is located in the southern portion of Belfair, Washington which is located in the northeastern portion of Mason County (Figure 1 – Vicinity Map). The proposed property (site) consists of five parcels include parcels 123325000026, 123325000087, 123325000088, which 123325000089 and 123325000090. The site is approximately 90 acres in size and is bordered to the west by the mouth of the Union River and Lynch Cove. A dike is located between the Union River and the subject property and a walking trail associated with the Theler Wetlands Center has been developed on top of the dike. Several single-family residences, a barn and associated outbuildings are located to the south and east of the site with some forest land interspersed along the property boundaries. Highway 3 is located approximately 600 feet to the east of the site and the property is accessed by Roessel Road, which runs through the center of the property. A gated entrance is located at the southern portion of the property on Roessel Road. The Washington Department of Fish and Wildlife (WDFW) own the land to the north of the site, which is open to the public. The project is located in Section 32 of Township 23 North, Range 01 West of the Willamette Meridian. The local jurisdiction and lead environmental review is Mason County.

## **PROJECT DESCRIPTION**

The PNSC is proposing to develop the subject property into a salmon and wetland habitat learning center for use by the public, universities and government agencies. The site has been divided into two halves for the purpose of this report. The eastern half of the site is located to the east of Roessel Road and the western half of the site is located to the west of Roessel Road. The PNSC is proposing to develop the eastern half of the site with several educational buildings, parking spaces and stormwater facilities. The western half of the site has been identified for restoration of salt marsh habitat that historically occupied this area. A dike is located along western edge of the property adjacent to the mouth of the Union River. This dike prevents saltwater from flowing onto the property from the Hood Canal. Proposed restoration of the western half of the site will include breaching the dike in several locations to allow tidal waters associated with Hood Canal to inundate historical salt marsh wetlands on the site.

A salmon bearing stream, identified as Mindy Creek, is located on the northern portion of the property. Mindy Creek enters the site from the northeast and flows north off site where it connects with the Union River. The creek has been impacted by historical agricultural practices on the property and contains a



limited riparian corridor through most of the site. The portion of Mindy Creek within the property boundaries is also being proposed for restoration.

A new entrance road has been proposed on the eastern side of the property. The entrance road will provide direct access to the site from Highway 3. A wetland and stream assessment was performed within the offsite area to the east to identify potential wetlands and the least impacting route for the access road. This wetland and stream delineation report summarizes the wetland and stream investigations on and adjacent to the property.

## PROJECT SCOPE

GeoEngineers was retained by the PNSC to delineate wetlands and streams on the proposed Salmon Center property and prepare a delineation report. This report documents the findings of the field investigation and the results associated with the wetland and stream assessments. This report specifically includes:

- A review of national and county wetland inventory data, county soils data, previous reports associated with the project and other relevant background data for the project area;
- Documentation of the vegetation, soil and hydrologic conditions associated with the existing wetlands on the property;
- Shallow groundwater monitoring well data from 39 wells on the site;
- Determination of the wetland category and stream typing according to MCRO;
- Determination of required buffer widths according to MCRO;
- Wetland functional assessment of all wetlands using Cooke Scientific Services Semi-quantitative Assessment Methodology (SAM); and
- Compile wetland information from previous reports and the field reconnaissance's into one comprehensive report.

## METHODS

## PAPER INVENTORY

The Washington State Department of Ecology (Ecology) (1989) recommends a thorough review of existing information regarding a particular site prior to conducting the fieldwork. GeoEngineers scientists conducted a search for pertinent and applicable data and maps. Reviews were conducted of the 1994 United States Geological Survey (USGS) topographic map, the 1987 United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, the United Stated Department of Agriculture (USDA) 1960 *Soil Survey of Mason County, Washington* and the Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) maps of known stream types for Mason County (DNR 2002). GeoEngineers also reviewed recent aerial photographs to determine changes in cover and land use practices that have occurred in the project area (USGS 1990 & Mason County 2005).

# FIELD DELINEATION

GeoEngineers biologists conducted a preliminary site visit on August 2, 2006 to perform a cursory assessment of onsite wetlands. On September 15, 2006 GeoEngineers biologists returned to the site to conduct a field investigation as to the potential presence and extent of wetlands on the property. A

wetland feasibility study was prepared for the PNSC from these two site visits describing the potential presence of wetlands on the site (GeoEngineers 2006).

GeoEngineers biologists visited the site to delineate existing critical aquatic features on June 18 through June 22, 2007 and August 2, 2007. The weather during the site visits varied from cloudy to sunny with temperatures ranging from 60°F to 80°F. All wetlands and uplands on the site had not been hayed prior or during the time of the site investigations. The region was experiencing average precipitation during the time of the delineations. Precipitation in Belfair, Washington two weeks prior to and during the week of the delineations totaled 0.44 inches (Accuweather 2007). As defined in MCRO (2006) Wetland 17.01.070C, wetland delineation methods used during the entire course of the on site delineations followed the guidelines for the *Washington State Wetlands Identification and Delineation Manual* (Ecology 1997) as well as the *United States Army Corps of Engineers Wetland Delineation Manual* ([USACE] 1987).

A thorough field review of each wetland and the surrounding hydrology was performed. Upon discovery of a wetland indicator, GeoEngineers biologists examined the area for presence of all three wetland parameters - hydrophytic plant species, hydric soils and positive hydrology. Based upon positive confirmation of the three wetland parameters, a sample plot was established. When changes were noted in plant community composition, hydrology or topographic position, additional sample plots were established to characterize the site. Upland plots were also established to characterize the upland conditions. In areas where a clear topographic break was not a direct indicator of the wetland boundary, upland plots were established to determine the location of the wetland boundary. Additional shovel probes were conducted in any areas where primary indicators of wetland hydrology including visual observations of saturated and inundated soils was not apparent, but hydrophytic vegetation was present, to determine the presence of hydric soil and/or indicators of wetland hydrology. These indicators include but are not limited to drainage patterns, drift lines, sediment deposition, water marks, oxidized rhizospheres, water stained leaves, algal mats, stream gauge data and flood predictions and historic records. Sample plot locations were flagged with red and white flagging, given a corresponding number and locations surveyed. The edges of each wetland were flagged with pink flagging to denote the boundary. Photographs of each wetland are located in Appendix A.

The site was examined for stream channels exhibiting sign of an ordinary high water mark (OHWM) as outlined in the USACE OHWM Identification Manual (2005). When an indicator of the OHWM was observed, a thorough investigation of the area was performed to identify additional indicators. The OHWM of the stream was then flagged with orange flagging to denote the boundary of the stream. Photographs of streams identified on site are located in Appendix A.

The site also contains agricultural drainage ditches that were constructed by hand throughout the site. GeoEngineers biologists examined the drainage ditches for signs of habitat, hydrology and direction of flow. It appears that the majority of the drainage ditches drain into the southwest corner of the site and eventually drain into the Union River through a tide gate during low tide. The drainage ditches were examined for signs of an OHWM associated with stream channels according to the USACE OHWM Identification Manual (2005). None of the drainage ditches on site were observed to exhibit an OHWM; therefore, none of the drainage ditches were classified as streams. The drainage ditches were also examined for signs of hydrology, hydric soils and hydrophytic vegetation associated with wetlands. The drainage ditches met all three parameters and are classified as wetlands in this report. However, agricultural activities associated with the current haying operation on site have removed vegetation from these ditches since our formal field delineation. A jurisdictional determination by reviewing agencies will

be required to determine the regulatory status of these drainage ditches. Photographs of the drainage ditches are located in Appendix A.

GeoEngineers prepared a sketch of the wetland and drainage ditch boundaries and submitted the figures to AES Consultants, Inc. for surveying. A wetland and stream delineation map (Appendix B-1) was created for reference. A general description of our findings is provided below. Site photographs are provided in Appendix A and detailed information for each sample plot is provided on wetland data sheets in Appendix C.

# STREAM CLASSIFICATION

Mason County requires the classification of all streams under their regulation to follow the DNR Stream Typing System as established in Washington Administrative Code Section 222-16-030. GeoEngineers categorized all streams on site according to the Mason County current water typing system. The current water typing system categories are briefly described as following:

- **Type S:** those streams inventoried as "shorelines of the state".
- **Type F:** those segments of streams not classified as Type S with high fish, wildlife, or human use.
- **Type SP:** streams that are proposed for consideration if any specific streams are identified that are significant in terms of anadromous fish and recommended to be protected by a larger buffer.
- **Type Np:** those segments of natural waters within bankfull width of defined channels that are perennial non-fish habitat streams.
- **Type Ns:** all segments of natural waters within bankfull width of defined channels that are not Types S, F, or Np and are seasonal, non-fish habitat streams.

The classification of streams was based upon an evaluation of stream structures and function. Streams on site were delineated according to the USACE regulatory guidance letter on OHWM identification (USACE 2005). Specifically, the characteristics identified for each stream included:

- Determination of flow regime (seasonal or perennial flow),
- Channel width at ordinary high water discharge,
- Stream gradient,
- Potential use as fish habitat, and
- Shelving, scouring, sediment deposits, changes in plant community, litter and debris and matted or absence of vegetation,

Stream buffers were identified according to the criteria set forth in MCRO 17.01.110 D2 Table 3. Mason County stream buffers applied to this project are identified below.



Stream Type	Buffer
Type "S"	150 feet
Type "F"	150 feet
Type "SP"	200 feet
Type "Np"	100 feet
Type "Ns"	75 feet
Saltwater and Lakes over 20 acres	100 feet

Table 1. Fish and Wildlife Conservation Area Development Standards

## WETLAND PARAMETERS

Wetlands are identified by the clear presence of three physical parameters. These parameters are hydrophytic plant species, hydric soils, and positive hydrology. A detailed description of each of these parameters is provided below.

## Hydrophytic Plants

Hydrophytic plants are species that generally prefer areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils sufficient to exert a controlling influence on the plant species present (Ecology 1997). The relative strength of an individual species' preference for wetness determines the indicator status for that species. The USFWS has determined wetland plant indicator status; a summary of this information for areas west of the Cascades is contained in Reed *et al.* (1993). To meet the wetland criteria established in Ecology (1997) and the USACE (1987), hydrophytic vegetation must exceed fifty percent of the total dominance measure for each vegetative stratum (tree, shrub or herbaceous layer). When more than 50 percent of the dominant species in each unit of vegetation have a wetland indicator status of obligate wet (OBL), facultative wet (FACW), or facultative (FAC), the vegetation unit meets the hydrophytic vegetation criterion. Plant nomenclature generally follows *The Flora of the Pacific Northwest* (Hitchcock and Cronquist 1973).

# Hydric Soils

Hydric soils are soils that are saturated or ponded long enough during the growing season to develop anaerobic conditions in the upper layer (USDA 1999). Prolonged anaerobic soil conditions lead to a chemically reducing environment. The chemical reduction of some soil components (e.g., iron and manganese oxides) leads to the development of soil colors and other physical characteristics that are usually indicative of hydric soils (Ecology 1997). Hydric soils can be identified by the use of a color comparison chart. A commercial color chart of soils is produced by Kollmorgen (1988) and commonly used by wetland scientists. Soil color is typically identified by hue (ex. 10YR), value (ex. 2/) and chroma (ex. /1). Hue describes the soil based on its relation to the spectral colors (red, yellow, green, blue, purple or a mixture of these colors); value describes the degree of lightness; and chroma indicates the strength or purity of the color. These terms reflect the variable amount of moisture, organics, and overall composition of any given soil sample providing critical information on soil wetness and degree of saturation and inundation (Kent 1994). In general, the lower the number for chroma and value, the more likely the soil sample is to be hydric. The color chart is also used to compare mapped soil types (USDA 1960) with field observations. Redoximorphic concentrations are present in soils when hydrology creates reducing conditions. These concentrations are depletions of oxygen in the soil resulting in the accumulation of Iron and Manganese. The concentrations are typically colored yellow to red and appear as a sharp contrast in color to the native soil.

## Hydrology

Hydrology is defined as the presence of water. The term "wetland hydrology" encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Numerous factors (e.g., precipitation, topography, soil permeability, plant cover and human disturbance) influence the hydrology of an area (Ecology 1997). Hydrology is often the least exact of the parameters, and indicators of wetland hydrology are sometimes difficult to find in the field. This is especially prevalent when wetlands are delineated in the summer months when springs or seeps may not be apparent. Under these conditions, indicators of hydrology are used as positive identification. Indicators such as drainage patterns, sediment deposits, dried algae, and water stained leaves or bark are examples of hydrology. The presence of these (or other) indicators, hydric soils, and hydrophytic vegetation confirm the presence of a wetland.

## WETLAND EVALUATION

Several standard methods for evaluating wetlands functions and values were used in conjunction with professional experience to provide qualitative and quantitative characterization of the wetlands on site. Additionally, many reference materials were used to support these evaluations. These are cited where appropriate throughout the text to justify and explain the results of these investigations.

## Wetland Classification and Categorization Assessment

Wetlands on site were classified using the Cowardin system (Cowardin *et al.* 1979). The Cowardin system describes wetlands by the plant communities, soils, and hydrologic regimes present. The hierarchical order identifies five major types of wetland systems: marine, estuarine, riverine, lacustrine, and palustrine. These systems are further stratified into classes and subclasses based on substrate materials, flooding regime, and vegetation life forms. Each class and subclass is then annotated with specific modifiers for water regimes, water chemistry, soil, and other special conditions. The naming convention from Cowardin has been adopted by the USFWS in their NWI maps.

Wetlands on site were also categorized using the four-tiered rating system as set forth in the 2004 *Washington State Wetlands Rating System for Western Washington* (Ecology 2004) according to MCRO 17.01.070 E1. Wetland categories are intended to capture the functions a wetland provides based upon landscape setting, wetland and vegetation classes, physical characteristics, and other value-based and function-based criteria to place wetlands into one of four categories. This system was developed to differentiate between wetlands based on their sensitivity to disturbance, rarity and the functions they provide. The rating categories that are used as management standards were adopted by Mason County for the purpose of assigning buffer widths and limitations on activities that may impact the wetlands. Land use intensity, wetland categories and associated buffers as defined in MCRO 17.01.070 B through F are listed below.



Rating	Examples of Land Uses That Cause the Impact Based on Common Zoning Categories
High	Commercial, Urban, Industrial, Institutional, Retail Sales, Residential subdivisions with more than 1 unit/acre, New agriculture (high-intensity processing such as dairies, nurseries and green houses, raising and harvesting crops requiring annual tilling, raising and maintaining animals), New transportation corridors, High intensity recreation (golf courses, ball fields), hobby farms
Medium	Single-family residential lots, residential subdivisions with 1 unit/acre or less, Moderate-Intensity Open Space (parks), New agriculture (moderate- intensity such as orchards and hay fields), Transportation enhancement projects
Low	Forestry, Open space (low-intensity such as passive recreation and natural resources preservation, minor transportation improvements)

Table 2. Ratings of Impact from Land Uses

		5		
Category	Habitat >29	Habitat 20-28	Water Quality 24-32 & Habitat <20	Habitat <20
IV				Low Impact: 25 ft Moderate Impact: 40 ft High Impact: 50 ft
III		Low Impact: 75 ft Moderate Impact: 110 ft High Impact: 150 ft		Low Impact: 40 ft Moderate Impact: 60 ft High Impact: 80 ft
II	Low Impact: 150 ft Moderate Impact: 200 ft High Impact: 225 ft	Low Impact: 75 ft Moderate Impact: 110 ft High Impact: 150 ft	Low Impact: 75 ft Moderate Impact: 90 ft High Impact: 100 ft	Low Impact: 50 ft Moderate Impact: 75 ft High Impact: 100 ft

Low Impact: 75 ft

Moderate Impact: 110 ft

High Impact: 200 ft

Table 3. Wetland Categories and Buffers

## Wetland Functional Assessment

Low Impact: 150 ft

Moderate Impact: 225 ft

High Impact: 250 ft

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GeoEngineers scientists used SAM to determine how well a wetland and its buffers function. This technique is designed to examine the presence of discrete functions and to determine how well a discrete wetland performs a particular function. The functional attributes analyzed are:

Low Impact: 50 ft

Moderate Impact: 75 ft

High Impact: 100 f ft

- Flood/Stormwater Control;
- Erosion/Shoreline Protection;
- Natural Biological Support;
- Specific Habitat Functions;
- Base Flow/Groundwater Support;
- Water Quality Improvement; and
- General Habitat Functions.

Each function is divided into three groups based on observed characteristics that, when totaled, determine the relative quality of the function being examined. These groups are as follows: Group 1 (higher quality



Low Impact: 50 ft Moderate Impact: 75 ft

High Impact: 100 ft

characteristics), Group 2 (medium quality characteristics), and Group 3 (lower quality characteristics). The sum of these characteristics is then expressed as a percentage of maximum possible points and an overall rating of High, Medium or Low is applied to the function.

The purpose of SAM is to assist wetland professionals in identifying and quantifying a potential wetland function in an individual wetland. The term "potential" is important, because it is usually not possible to verify the presence of a function from a single site visit. A determination of the potential for a function to occur, based on the presence of physical characteristics that are conducive to that function, is all that can be determined in a quick evaluation. For example, we can tell that a site has good amphibian habitat, but it is not always possible, at every season, to tell whether amphibians are using that habitat. SAM is based on a system developed by Reppert (Reppert *et al.* 1979) that has been modified for greater applicability to Northwest wetland ecosystems.

## WETLAND HYDROLOGY MONITORING

Due to the disturbed nature of the agricultural fields, positive primary and secondary hydrology indicators within 12 inches of the surface were not identifiable throughout the majority of the site. Observations of hydrology during initial site visits were inconclusive and more extensive hydrological monitoring was deemed necessary to accurately describe the presence or absence of wetland hydrology. Wetland hydrology data was collected using shallow groundwater monitoring wells from March through June 2007. This groundwater data was incorporated into the wetland delineation determination process on June 18 through June 22, 2007 and August 2, 2007 to aide in the identification of the wetland boundaries on site. Documenting the presence of hydrology within 12 inches of the ground surface will aide in the confirmation or invalidation of marginal areas that were originally thought may meet wetland criteria.

The Washington State Wetlands Identification and Delineation Manual (Ecology 1997) and the 1987 *Corps of Engineers Wetland Delineation Manual* define wetland hydrology criteria as areas in which soil conditions are seasonally inundated and/or saturated for a consecutive number of days greater than or equal to 5 percent of the growing season. When this level of saturation occurs within 12 inches of the surface, it promotes the establishment of hydrophytic vegetation and the formation of hydric soils. The USDA WETS table for Shelton, Washington states that there is a 50 percent probability that the air temperature will be 28°F or higher starting on April 6 and ending on November 19 of any given year (USDA 2002). Biological indicators indicating that the growing season has begun include the presence of two or more different non-evergreen vascular plant species growing in a wetland or surrounding areas that exhibit one or more of the following indicators: emergence of herbaceous plants from the ground, appearance of new growth from vegetative crowns, coleoptile/cotyledon emergence from seed, bud burst on woody plants, emergence or elongation of leaves on woody plants and/or the emergence or opening of flowers. In order to meet the criteria for wetland hydrology on site, groundwater must be present within 12 inches of the surface for 13 days once the growing season has begun.

Thirty six shallow groundwater monitoring wells were initially installed by the PNSC with oversight from GeoEngineers on March 6, 2007. Since the site is relatively flat and heavily disturbed from agricultural activities, well locations were selected by GeoEngineers to determine the presence of hydrology in areas that contained vegetation varying from obligate to upland species. Shallow groundwater monitoring wells were placed in small depressions, on the edges of depressions, near the edges of the drainage ditches and in upland hummocks scattered throughout the site in order to collect sufficient hydrology data to conclude the presence of water within 12 inches of the surface. Hand measurements were taken of each well four times a week on three different days. Two measurements were taken, one during high tide and one during low tide, one day a week to identify if there was tidal influence on groundwater within onsite wetlands

from the Hood Canal. Three electronic pressure transducers were also installed on April 9, 2007 to measure hour to hour fluctuations in the groundwater levels. Groundwater data was recorded through June 10, 2007 by both hand and pressure transducers. The data collected was analyzed and used in the delineation of wetlands in the agricultural fields. Monitoring well locations are shown in Appendix B-1-Wetland and Stream Delineation Map.

#### RESULTS

#### PAPER INVENTORY

The digital data available from the 1987 NWI map indicates that the majority of the site is covered by wetlands (Figure 2). The wetland types documented on site are as follows:

- PEMAH: Palustrine, Emergent, Temporarily/Permanently Flooded,
- PEMCH: Palustrine, Emergent, Seasonally/Permanently Flooded,
- PFOC: Palustrine, Forested, Seasonally Flooded,
- PFOA: Palustrine, Forested, Temporarily Flooded, and
- PSSCH: Palustrine, Shrub-Scrub, Seasonally/Permanently Flooded.

However, NWI maps are produced from aerial photographs and topographic maps and are subject to error. Recent changes in the nature of the vegetation and hydrology, as well as recent development activities in the surrounding area, are not reflected in the maps and must be considered when evaluating this site.

The *Soil Survey of Mason County, Washington* (USDA 1960) identifies three soil types as being present within the boundaries of the site. Figure 3 (Soils Survey Map) depicts the locations of the three different soil types. The soil type along eastern portion of the site is Mukilteo peat, shallow over gravel, 0 to 2 percent slopes. Edmonds fine sandy loam, 0 to 2 percent slopes is present in central portion of the site. This soil survey does not recognize the dike along the southwestern portion of the site and existing agricultural activities and lists the western portion of the site as tidal marsh, 0 to 2 percent slopes. All three soils are listed as hydric soils on the hydric soils list for Mason County (USDA 2001).

Mukilteo peat, shallow over gravel, 0 to 2 percent slopes is a strongly acid brown peat, saturated to the surface throughout the year. It is a very poorly drained soil that has moderately high water movement in the most restrictive layer. A dense root restrictive layer is greater than 60 inches below the surface. The seasonal zone of water saturation is about 9 inches during January, February, March, and December. The available water capacity is very moderate, the shrink-swell potential is low, it is not flooded and it is not ponded. Organic matter content in the surface horizon is about 40 percent.

Edmonds fine sandy loam, 0 to 2 percent slopes is a friable, medium to strongly acid soil located exclusively in the lower valley of the Union River. During most of the year the water table is within one foot of the surface. Edmonds find sandy loam can appear dark grayish-brown to light-gray with mottles of varying colors. The soil is poorly drained and water movement in the most restrictive layer is moderately high. A dense root restrictive layer forms greater than 60 inches below the surface. The seasonal zone of water saturation is about 0 inches during January, February, March, April, May, November, and December. The available water capacity to a depth of 60 inches is high, the shrink-swell potential is low, it is not flooded and it is not ponded. Organic matter content in the surface horizon is about 4 percent.

Tidal marsh, 0 to 2 percent slopes is reached by salt water during high tides. It is composed of various kinds of silt, but is mainly medium and fine textured material mixed with fibrous peat. These sediments contain excessive amounts of soluble salt. The soil is very poorly drained and water movement in the most restrictive layer is moderately high. A dense root restrictive layer forms greater than 60 inches below the surface. The seasonal zone of water saturation is about 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. The available water capacity to a depth of 60 inches is high, the shrink-swell potential is low, it is frequently flooded and it is frequently ponded. Organic matter content in the surface horizon is about 1 percent. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil surface.

The 1994 topographic map from the USGS depicts that the site is relatively flat. The dikes on the western boundary of the site were not shown on any historic topographic map examined. The 1990 aerial photo from the USGS clearly shows the presence of the dike and agricultural fields on site. It appears from photographic interpretation that the land use and buildings on site have not changed in the past 17+ years. The DNR FPARS map indicates that one stream runs through the northeast portion of the site from east to west (DNR 2006).

## SITE DESCRIPTION AND EXISTING CONDITIONS

The site is approximately 90 acres in size and located where the mouth of the Union River meets Lynch Cover at the tip of the Hood Canal. The majority of the 90 acre site has been historically farmed for agricultural hay as well as pasture for livestock. A dike was built along the western and southern boundaries of the site to block tidal waters from the Hood Canal entering the site and numerous manmade ditches were constructed throughout the site to drain water from the agricultural fields. The site is primarily comprised of hay fields and all of the native vegetation has been removed from these fields and hay grasses have been planted. The top 10 inches of the soil in the agricultural fields has been disturbed on a regular basis for haying. This herbaceous plant community dominates the agricultural fields, but some forested areas exist in the eastern and southeastern portions of the site. Several existing structures are located on site including two single-family residences, a barn and several outbuildings. The topography of the site is relatively flat and the elevations of the fields are lower than the observed high tide elevations along the outer edge of the dike.

The surrounding land use to the west consists of the Union River and WDFW public land on the western side of the river. WDFW also owns the land to the north and this land is also open to the public. A public walking trail associated with the Theler Wetlands Center runs along the southwestern, western and northwestern boundary of the site on top of the dike. The eastern and southeastern portions of the site are bordered by single-family residences and several small commercial businesses along Highway 3.

Wetland and upland vegetation varies throughout the site based upon topography, soil type and land use. Two types of wetland vegetation communities are present onsite. Forested wetlands are located on the eastern and southeastern portion of the site. The forested layer in these wetlands is primarily comprised of red alder (*Alnus rubra*, FAC), western red cedar (*Thuja plicata*, FAC) and black cottonwood (*Populus balsamifera spp. Trichocarpa*, FAC). The shrub layer is comprised mainly of salmonberry (*Rubus spectabilis*, FAC+), Nootka rose (*Rosa nutkana*, FAC), Pacific willow (*Salix lasiandra*, FACW+) and red-osier dogwood (*Cornus stolonifera*, FACW) with an herbaceous layer of skunk cabbage (*Lysichiton americanum*, OBL), water parsley (*Oenanthe sarmentosa*, OBL), small-fruited bulrush (*Scirpus microcarpus*, OBL) and slough sedge (*Carex obnupta*, OBL). The herbaceous wetlands are located in the agricultural fields and are dominated by sawbeak sedge (*Carex stipata*, OBL), soft rush (*Juncus effusus*,

FACW), Baltic rush (*Juncus balticus*, FACW+), silverweed (*Potentilla anserine*, OBL), slough sedge, meadow foxtail (*Alopecurus geniculatis*, FACW), short-awn foxtail (*Alopecurus aequalis spp. Aequalis*, OBL) and velvet grass (*Holcus lanatus*, FAC). The upland areas of the site are also generally located in the agricultural fields and were noted to contain sweet vernalgrass (*Anthoxanthum odoratum*, FACU), tall fescue (*Festuca arundincacea*, FAC-), orchardgrass (*Dactylis glomerata*, FACU), perennial ryegrass (*Lolium perenne*, FACU), common timothy (*Phleum pretense spp. Pretense*, FAC-), colonial bentgrass (*Agrostis capillaris*, FAC), birdsfoot trefoil (*Lotus corniculatus*, FAC), smooth hawksbeard (*Crepis capillaris*, FACU) and red clover (*Trifolium pretense*, FACU).

Hydrological input into the forested wetlands along the eastern and southeastern portion of the site is fed from a high groundwater table and seasonal precipitation. Standing pockets of water were observed throughout the forested wetlands and the soil was saturated to the surface with areas of shallow inundation. The herbaceous wetlands in the agricultural fields are a mixture of a shallow groundwater and seasonal precipitation that ponds in topographic depressions. Soil type and permeability in these wetlands influence the amount of time that hydrology stays on the ground surface.

Soils with clay and silts absorb water slower than sandy or loamy soil. The eastern portion of the site was noted to contain more silt in the upper 12 inches of the ground than the western portion of the site which contained more sandy soils. Redoximorphic concentrations were observed throughout the majority of the site in each soil type. However, due to the disturbed nature of the site from agricultural activities and the presence of relic soils from tidal influence before the dike was constructed, soils were examined for recent indicators of hydric conditions including oxidized rhizospheres, anoxic "rotten egg" odor, organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types.

Drainage ditches are present throughout the entire site to drain the agricultural fields. The ditches on the western portion of the site drain to a tide gate on the southwest portion of the dike. The water in these ditches drain into the Union River during low tide events and backs up and fills the ditches during high tide. The tide gate has a functioning flap valve that allows only one directional flow, eliminating the free exchange of salt water and fish species into the southern drainage ditches. The tide gate appears to be a fish barrier and therefore fish use is not expected to occur in the southern drainage ditches. There was an OHWM associated with these ditches, which consisted of water marks and shifts in vegetation. Wetland vegetation primarily consisting of common cattail (Typha latifolia, OBL), hardstem bulrush (Scirpus acutus, OBL) and small-fruited bulrush was observed within the western drainage ditches. The eastern drainage ditches drain under the road to the west only when the water level raises high enough. Otherwise, the water drains subsurface or to Mindy Creek, a salmon-bearing stream, which flows through the northeastern portion of the site. These drainage ditches contained red alder, Pacific willow, cattail, hardstem bulrush, field horsetail (Equisetum arvense, FAC) and small-fruited bulrush with Himalayan blackberry (Rubus armeniacus, FACU) and stinging nettle (Urtica dioia spp. Gracilis, FAC+) along the upland edges. Photographs visually depicting the wetland and upland conditions can be found in Appendix A.

After the formal delineation was completed, the drainage ditches on site were cleared of all vegetation to allow for optimal drainage of the agricultural fields. Vegetation was removed using hand tools and industrial mowers, piled in the northeastern upland portion of the site and burned. None of the soils or hydrologic connections were disrupted during the clearing event. These drainage ditches have been historically cleared of all vegetation approximately every ten years. Soil was also excavated out of these ditches in the 1980's to remove excess sediment that had migrated to the bottom of the ditches. Photographs visually depicting the drainage ditches before and after clearing can be found in Appendix A.

## WETLAND HYDROLOGY MONITORING

Groundwater data was collected at 36 shallow groundwater monitoring wells located throughout the site. Data was collected four times a week beginning on March 6, 2007 and ending on June 10, 2007. This period was selected for monitoring because groundwater in each well will typically dry up during the summer months. The period of highest groundwater depths during the growing season is assumed to be at the beginning of the growing season and gradually drop through the spring and summer. According to the USDA WETS Table for Shelton, Washington, the growing season typically starts on April 6 and ends on November 19 (USDA 2002). However, biological indicators observed in the field suggested that the growing season started on March 9, 2007. Biological indicators observed included the emergence of herbaceous plants from the ground and bud bursts on woody plants. Therefore, the critical period for defining wetland hydrology is from March 9 through June 10.

A review of groundwater data indicates that shallow groundwater depth on site fluctuates primarily in accordance with precipitation. Peaks in groundwater elevation coincide with precipitation events. Soil types observed during the installation of wells indicated the presence of a silty loam layer in the upper 24 inches on the eastern half of the site. Silty sands were observed in the upper 24 inches on the western half of the site. Silty sands were observed in the upper 24 inches on the western half of the site. Silty sands were observed in the upper 24 inches on the western half of the site. Shallow groundwater appears to be perched atop this less permeable silty loam layer and groundwater appears to percolate through the silty sand layer quicker. Inundation depths and wetland presence are largely determined by the heterogeneity of depth to the silty soil layer throughout the site. Data was compared to tidal data as well to determine whether tidal fluctuations affect shallow groundwater depth on site. Minor fluctuations ranging from one to three inches were observed in the hand measured and pressure transducer wells. These fluctuations are caused by the pooling of water in the drainage ditches when the tide gate is closed during high tide. Once the tide drops low enough for the tide gate to open, the water in the ditches drains out of the site. These minor water level fluctuations are not substantial enough to impact wetland hydrology onsite and we conclude that rainfall on top of a less permeable layer is the primary determinant for shallow groundwater elevation throughout the site.

Twenty three out of the 36 groundwater monitoring wells met or exceeded wetland hydrology criteria. However, wells D-3, D-5, E-2, E-4, E-7, E-10, E-11, F-3, F-5 and F-6 met the hydrology requirements for wetlands but did not meet the wetland requirements for hydric soils and/or hydrophytic vegetation. Therefore, the areas surrounding these wells were considered upland. Data sheets depicting the vegetation and soils surrounding these wells are located in Appendix C-Wetland Data Sheets. Table 4 below outlines the wells that have positive wetland hydrology. Appendix D-Shallow Groundwater Well Monitoring Data depicts the groundwater level in each well. The hydrology data collected was used in the determination of the wetlands on site.

Well #	Wetland Hydrology	Well #	Wetland Hydrology	Well #	Wetland Hydrology
A-1	No	A-2	No	A-3	No
A-4	No	B-1	Yes	B-2	No
B-3	No	B-4	No	B-5	No
C-1	No	C-2	No	C-3	No
C-4	No	C-5	Yes	D-1	Yes
D-2	Yes	D-3	Yes	D-4	Yes
D-5	Yes	E-1	Yes	E-2	Yes
E-3	No	E-4	Yes	E-5	Yes

Table 4. Shallow Groundwater Monitoring Wells Hydrology



Well #	Wetland Hydrology	Well #	Wetland Hydrology	Well #	Wetland Hydrology
E-6	Yes	E-7	Yes	E-8	Yes
E-9	Yes	E-10	Yes	E-11	Yes
F-1	Yes	F-2	Yes	F-3	Yes
F-4	Yes	F-5	Yes	F-6	Yes

 Table 4. Shallow Groundwater Monitoring Wells Hydrology (Continued)

## STREAM CLASSIFICATION AND EVALUATION

GeoEngineers identified and delineated one stream (Mindy Creek) on site by documenting and verifying OHWM parameters. The wetland map (Appendix B-1) depicts the location of the OHWM boundaries. The OHWM of Mindy Creek was not delineated throughout the entire site since Mindy Creek is located within the Wetland A complex and the wetland buffers are larger than the identified stream buffer in the northeastern corner of the site.

## STREAM PARAMETERS

Mindy Creek enters the site from the northeast and exits the site in the center of the northern boundary. Mindy Creeks flows into the Union River 450 feet to the north of where it exits the site. Tidal influence in the Union River from the Hood Canal almost reaches the northern boundary of the site through Mindy Creek. The OHWM of Mindy Creek was delineated starting where it leaves the site next to the culvert and ended where it meets the forested portion of Wetland A.

The stream channel in between the OHWM was approximately two to three feet wide and two feet deep. A steep topographic break was present at the OHWM line. The OHWM was determined by topographic changes, scour lines and vegetation community composition. Mindy Creek flows year-round and high water typically occurs during the winter months. A riparian wetland is associated with Mindy Creek on both sides and this area contains wetland vegetation. The vegetation communities along Mindy Creek contained both shrub and herbaceous layers. The shrub layer is primarily composed of Pacific willow, hardhack, red alder and sitka willow. The herbaceous layer consisted of soft rush, slough sedge, lady fern and small-fruited bulrush. Site photographs of the creek bank and vegetation are located in Appendix A.

## Stream Classification

Mason County has specified that all streams located in Mason County will be typed according to MCRO 17.01.110D2.

Stream	Surface Flow	Classification	Required Buffer
Mindy Creek	Perennial	Туре F	150 Feet

 Table 5. Stream Classification

## WETLAND CATEGORIZATION AND EVALUATION

GeoEngineers identified and delineated 29 wetlands (A-X) on site by documenting and verifying wetland parameters throughout the site. The wetland map (Appendix B-1) depicts the location of the wetland

boundaries and associated sample points. Wetland specific information is contained in the wetland data sheets located in Appendix C.

## WETLAND PARAMETERS

## Wetland A

Wetland A is a complex of several different hydrogeomorphic wetlands including slope, depressional and riverine. These wetlands are all connected via subsurface and overland water flow but were divided into their respective hydrogeomorphic classifications for rating purposes.

## A-1

Wetland A-1 is a 812,230 square feet (18.65 acres) sloped wetland located on the eastern half of the site. This wetland extends off site to the north, east and south. It contains a mixture of emergent, scrub-shrub and forested vegetation. The forested layer of the wetland is dominated by red alder, western red cedar and black cottonwood in the southeastern and eastern portions of the wetland on the outskirts of the agricultural fields. The shrub layer in the forested wetland is dominated by salmonberry, Nootka rose and Pacific willow and the herbaceous layer consists of skunk cabbage, water parsley and slough sedge. Pockets of standing water were observed throughout the forested portion of Wetland A and the soil was saturated to the surface in the area where no standing water was present. Soil color in this area consisted primarily of 10YR2/1.

Portions of this wetland are located in the agricultural fields in the southeastern portion of the site. FAC, FACW and OBL species including field horsetail (*Equisetum arvense*, FAC), meadow foxtail, colonial bentgrass, velvet grass, tall fescue, tall buttercup (*Ranunculus acris*, FACW-), soft rush and sawbeak sedge were observed in this area. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species with recent indicators of hydric soils and wetland hydrology as well as monitoring well data to determine the wetland boundary. Recent indicators of hydric soils included anoxic "rotten egg" odor, organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Precipitation and a high groundwater table in this portion of the wetland is the main source of hydrology. Soil color in this wetland consisted of 10YR4/2 with moderate redoximorphic concentrations. The texture of the soil was identified to be silt loam.

One drainage ditch is included in the boundary of Wetland A-1. This ditch runs north and south along the eastern edge of the agricultural field and drains into Mindy Creek during high precipitation events. This ditch contained the same vegetation as the forested wetland but also contained Himalayan blackberry on the western side of the ditch. The ditch contains standing water and hydrology in the ditches originates from seeps and surface water draining from the fields. Soils in the ditch were also colored 10YR2/1.

## A-2

Wetland A-2 is a 69,999 square feet (1.61 acres) sloped wetland located in the northeastern corner of the site. FAC and FACW species including field horsetail (*Equisetum arvense*, FAC), meadow foxtail, colonial bentgrass, velvet grass, tall fescue, tall buttercup (*Ranunculus acris*, FACW-) and soft rush were observed throughout all of the fields on site. However, wetland hydrology data collected from the monitoring well indicated that only certain portions of the field meet wetland criteria. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and sawbeak sedge with recent indicators of hydric soils and wetland hydrology as well as monitoring well data to determine the wetland boundary. Recent indicators of hydric soils included anoxic "rotten egg" odor, organic accumulation on the surface layer and diffuse soil layer

boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Precipitation and a high groundwater table in this wetland is the main source of hydrology. Soil color consisted of 10YR4/2 with moderate redoximorphic concentrations. The texture of the soil was identified to be sandy silt.

## A-3

Wetland A-3 is a 33,698 square feet (0.77 acres) riverine wetland associated with Mindy Creek, located on the eastern half of the site. Mindy Creek runs through the northern portion of the site from east to west. The associated drainage ditches in the eastern portion of the site drain into Mindy Creek during high precipitation events. The riparian wetland associated with the creek contains Pacific willow, hardstem bulrush, small-fruited bulrush, sawbeak sedge, soft rush and cattail. Wetland A-3 contained standing pockets of water and the soil was saturated to the surface. Hydrology in this wetland originates from ditches draining the fields and over bank flooding from Mindy Creek. Soils in the wetland were colored 10YR2/1.

## A-4

Wetland A-4 is a 97,726 square feet (2.24 acres) sloped wetland located on the eastern half of the site. FAC and FACW species including field horsetail (*Equisetum arvense*, FAC), meadow foxtail, colonial bentgrass, velvet grass, tall fescue, tall buttercup (*Ranunculus acris*, FACW-) and soft rush were observed throughout all of the fields on site. However, wetland hydrology data collected from the monitoring wells indicated that only certain portions of the fields meet wetland criteria. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and sawbeak sedge with recent indicators of hydric soils and wetland hydrology as well as monitoring well data to determine the wetland boundary. Recent indicators of hydric soils included anoxic "rotten egg" odor, organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Precipitation and a high groundwater table in the eastern half of the site is the main source of hydrology for this wetland. Soil color in this wetland consisted of 10YR4/2 with moderate redoximorphic concentrations. The texture of the soil was identified to be sandy silt.

## A-5

Wetland A-5 is a 22,030 square feet (0.51 acres) depressional wetland located on the eastern half of the site. This wetland is located in a drainage ditch for the agricultural fields. This wetland contained Pacific willow, red alder, Sitka willow (*Salix sitchensis*, FACW), cattail, soft rush and sawbeak sedge. A culvert located in the southwestern portion of the wetland drains this ditch into Wetland S-1 under Roessel Road. It is connected to Wetland A-4 which is a slope wetland; however, water drains into this drainage ditch from seeps and does not drain out. The wetland contained standing water and portions of the wetland were saturated to the surface. Hydrology originates from seeps draining the fields. Soils in the wetland were colored 10YR2/1.

## Wetland B

Wetland B is a slope wetland and the delineated size is 19,832 square feet (0.46 acres). This wetland contains a mixture of mature red alder, hardhack (*Spiraea douglasii*, FACW), small-fruited bulrush and false-lily-of-the-valley (*Maianthemum dilatatum*, FAC) in the portion of the wetland not located in the agricultural field. The field portion of the wetland contained velvetgrass, tall fescue, soft rush, field horsetail and sawbeak sedge. The delineated wetland boundary in the agricultural field followed the line of FAC, FACW and OBL species such as soft rush, meadow foxtail, sawbeak sedge, skunk cabbage and hardhack with recent indicators of hydric soils and wetland hydrology as well as a topographic depression to determine the wetland boundary. Recent indicators of hydric soils included anoxic "rotten egg" odor,



organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres and matted vegetation. A dense patch of Himalayan blackberry is located to the east of this wetland in the adjacent upland. Wetland hydrology originates from precipitation and a high groundwater table. Soils were noted to be 10YR3/1 in color in the wetland and standing water was observed 4 inches below the surface.

## Wetland C

Wetland C is a slope wetland and the delineated size is 9,524 square feet (0.22 acres). This wetland contains only an herbaceous layer consisting of field horsetail, meadow foxtail, velvet grass and tall buttercup. Orchard grass and sweet vernalgrass were present on the edge of the wetland in the adjacent upland. A small topographic break, approximately six inches, was also observed around the boundary of the wetland. Monitoring well B-1 showed positive hydrology inside of the wetland and wetland the boundary was based off of a distinct topographic break, the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and sawbeak sedge and recent indicators of hydric soils and wetland hydrology. Recent indicators of hydric soils included anoxic "rotten egg" odor, organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Wetland hydrology originates from precipitation and a high groundwater table. Soil color in the wetland consisted of 2.5Y5/1 with moderate redoximorphic concentrations.

## Wetland D

Wetland D is a depressional wetland located in the drainage ditch running east to west through the southeastern agricultural field. This wetland does not extend west across the road. It is 16,644 square feet (0.38 acres) in size and drains to the west under the road through a culvert only during times of heavy precipitation. Vegetation observed within the wetland consists of red alder, sitka willow, cattail, hardstem bulrush, small-fruited bulrush and water parsley. Himalayan blackberry and stinging nettle were present along the edges of the wetland. Wetland hydrology is fed from seeps draining the agricultural fields surrounding the ditch and direct precipitation. Standing water was present throughout the entire ditch but it was not observed to be flowing. Soils were noted to be comprised of silt and 10YR2/1 in color.

# Wetland E

Wetland E is a depressional wetland with a delineated size of 17,599 square feet (0.40 acres). This wetland is located next to the northern single-family residence and the northern portion of this wetland resides in a maintained garden. A small topographic break was observed along the boundary of the wetland. A distinct vegetation shift was also noted at this break and vegetation in the wetland consisted of soft rush, Baltic rush, slough sedge, meadow foxtail and silverweed. Matted vegetation and algal mats were noted in the wetland indicating the presence of inundation during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail slough sedge and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in the wetland were silty sand and the primary soil color consisted of 2.5Y5/2 with moderate redoximorphic concentrations.



#### Wetland F

Wetland F is a small depressional wetland with a delineated size of 2,097 square feet (0.05 acres). Signs of inundation including matted vegetation and algal mats were observed in the deepest portions of the wetland and a small topographic break was observed along the delineated boundary. Wetland vegetation included slough sedge and meadow foxtail. Monitoring well D-2 was located in the northeastern corner of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as meadow foxtail and slough sedge with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland consist of a silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland G

Wetland G is a depressional wetland with a delineated size of 3,890 square feet (0.09 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland and a small topographic break was observed along the boundary of the wetland. Vegetation observed within the wetland included soft rush, Baltic rush, meadow foxtail, tall buttercup, silverweed and twinberry (*Lonicera involucrate*, FAC+). The twinberry in the wetland was observed to be less than 1-foot tall. Monitoring well D-4 was located in the eastern portion of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland H

Wetland H is a depressional wetland and the delineated size is 1,053 square feet (0.02 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland and a small topographic break was observed along the boundary of the wetland. Vegetation observed within the wetland included soft rush, Baltic rush, meadow foxtail and silverweed. Wetland hydrology appears to primarily originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y4/2 with moderate redoximorphic concentrations.



#### Wetland I

Wetland I is a depressional wetland and the delineated size is 1,944 square feet (0.04 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included soft rush, Baltic rush, meadow foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Monitoring well E-1 was located in the northeastern portion of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as monitoring well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y4/2 with moderate redoximorphic concentrations.

## Wetland J

Wetland J is a depressional wetland and the delineated size is 2,043 square feet (0.05 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included Baltic rush, meadow foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland K

Wetland K is a depressional wetland and the delineated size is 607 square feet (0.01 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included soft rush, Baltic rush, velvet grass and slough sedge. A small topographic break was observed along the boundary of the wetland. Monitoring well E-5 was located in the center of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and slough sedge with recent indicators of hydric soils and wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.



#### Wetland L

Wetland L is a mosaic of small depressional wetlands and the delineated size of the mosaic is 13,725 square feet (0.32 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of all of the wetlands. Vegetation observed within the wetland areas included soft rush, Baltic rush, meadow foxtail, short-awn foxtail and silverweed. A small topographic break was observed along the boundary of each wetland. Upland areas between the wetlands included vegetation such as tall fescue, sweet vernalgrass, birdsfoot trefoil, smoth hawksbeard and tall buttercup. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland M

Wetland M is a depressional wetland and the delineated size is 1,387 square feet (0.03 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included soft rush, meadow foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland N

Wetland N is a depressional wetland and the delineated size is 3,778 square feet (0.09 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included soft rush, meadow foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland O

Wetland O is a depressional wetland and the delineated size is 7,736 square feet (0.18 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland.

Vegetation observed within the wetland included soft rush, meadow foxtail, slough sedge and silverweed. A small topographic break was observed along the boundary of the wetland. Monitoring well E-6 was located in the northeastern portion of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and slough sedge with recent indicators of hydric soils and wetland hydrology as well as monitoring well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland P

Wetland P is a depressional wetland and the delineated size is 1,218 square feet (0.03 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included soft rush, Baltic rush, meadow foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y4/2 with moderate redoximorphic concentrations.

## Wetland Q

Wetland Q is a mosaic of small depressional wetlands and the delineated size is 26,401 square feet (0.61 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of all of the wetlands. Vegetation observed within the wetlands included soft rush, Baltic rush, meadow foxtail, short-awn foxtail and silverweed. A small topographic break was observed along the boundary of each wetland. Upland areas between the wetlands included vegetation such as tall fescue, sweet vernalgrass, birdsfoot trefoil, smoth hawksbeard and tall buttercup. Monitoring wells E-8 and E-9 were located in the northern and southern portion of this wetland. Hydrology data from both of these wells confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and slough sedge with recent indicators of hydric soils and wetland hydrology as well as monitoring well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.



#### Wetland R

Wetland R is a depressional wetland and the delineated size is 3,024 square feet (0.07 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included soft rush, Baltic rush, meadow foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. The wetland boundary was determined by following the topographic break and identifying the presence of OBL species such as silverweed. Soils in this wetland were silty sand and the color was 2.5Y5/2 with moderate redoximorphic concentrations.

## Wetland S

Wetland S contains two different hydrogeomorphic wetlands including slope and depressional. Both wetlands are connected primarily via subsurface flow but a small overland water flow is present on the eastern portion of the wetland. These wetlands were divided into their respective hydrogeomorphic classifications for rating purposes.

## S-1

Wetland S-1 is a depressional wetland controlled by a tide gate on the Union River. The delineated size of Wetland S-1 is 153,879 square feet (3.53 acres). This wetland is part of the drainage ditch system on the western portion of the site. The water in the ditch drains out into the Union River during low tide. The ditch fills up with water during high tide when the tide gate is closed. Vegetation in the wetland consisted primarily of hardstem bulrush and cattail. The southeast portion of the wetland contained water parsely, skunk cabbage, nootka rose and small-fruited bulrush. Wetland hydrology originates from precipitation and seeps draining the agricultural fields surrounding the ditch. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included anoxic "rotten egg" odor, organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were a silty and the color was 10YR2/1.

## S-2

Wetland S-2 is 10,333 square feet (0.24 acres) in size located in the northern tip of the agricultural field west of the road. This area contains emergent vegetation including soft rush, velvet grass, meadow foxtail, small-fruited bulrush and sawbeak sedge. A distinct topographic break was present along the boundary of the wetland. Monitoring well D-1 was located in the field in this portion of the wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as soft rush, meadow foxtail and sawbeak sedge with recent indicators of hydric soils and wetland hydrology as well as monitoring well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent

indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils were observed to be saturated about 8 inches below the surface and soil coloring consisted primarily of 2.5Y4/1 and 2.5Y5/2 with redoximorphic concentrations in the lower layer.

## Wetland T

Wetland T is a depressional wetland and the delineated size is 9,961 square feet (0.23 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included soft rush, Baltic rush, velvet grass, meadow foxtail, short-awn foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Monitoring well F-1 was located in the northeastern portion of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as meadow foxtail, short-awn foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as monitoring well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. The wetland boundary was determined by analyzing the hydrology data, following the topographic break and identifying the presence of OBL species such as silverweed and short-awn foxtail. Soils in this wetland were silty sand and the color was 2.5Y6/2 with moderate redoximorphic concentrations.

## Wetland U

Wetland U is a depressional wetland and the delineated size is 2,073 square feet (0.05 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included meadow foxtail, velvet grass, tall buttercup and slough sedge. A small topographic break was observed along the boundary of the wetland. Monitoring well F-2 was located in the western portion of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as meadow foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as monitoring well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. The wetland boundary was determined by analyzing the hydrology data, following the topographic break and identifying the presence of OBL species such as silverweed. Soils in this wetland were silty sand and the color was 2.5Y6/2 with moderate redoximorphic concentrations.

## Wetland V

Wetland V is a depressional and slope wetland and the delineated size is 8,456 square feet (0.19 acres). This wetland includes a small depressional wetland in the field, a small ditch which drains the wetland to the road and the roadside drainage ditch which transports water to the southern portion of the site. Signs of inundation including matted vegetation and algal mats were observed in the bottom of the western portion of the wetland. Vegetation observed within the wetland included soft rush, meadow foxtail, slough sedge and silverweed. A small topographic break was observed along the boundary of the wetland. Wetland hydrology primarily appears to originate from precipitation and a high groundwater

table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail, slough sedge and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y6/2 with moderate redoximorphic concentrations.

## Wetland W

Wetland W is a depressional and slope wetland and the delineated size is 1,480 square feet (0.03 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included Baltic rush, meadow foxtail, tall fescue and silverweed. A small topographic break was observed along the boundary of the wetland. Monitoring well F-4 was located in the northeastern portion of this wetland. Hydrology data from this well confirmed the presence of wetland hydrology during the growing season. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. Due to the disturbed nature of the site, we correlated the presence of FAC, FACW and OBL species such as meadow foxtail, short-awn foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as monitoring well data and a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y6/2 with moderate redoximorphic concentrations.

## Wetland X

Wetland X is a depressional and slope wetland and the delineated size is 1,142 square feet (0.03 acres). Signs of inundation including matted vegetation and algal mats were observed in the bottom of the wetland. Vegetation observed within the wetland included Baltic rush, meadow foxtail, tall fescue, short-awn foxtail and silverweed. A small topographic break was observed along the boundary of the wetland. Wetland hydrology primarily appears to originate from precipitation and a high groundwater table at the beginning of the growing season. The wetland boundary was determined by correlating the presence of FAC, FACW and OBL species such as meadow foxtail, short-awn foxtail and silverweed with recent indicators of hydric soils and wetland hydrology as well as a distinct topographic break to determine the wetland boundary. Recent indicators of hydric soils included organic accumulation on the surface layer and diffuse soil layer boundaries between varying soil types and recent indicators of wetland hydrology included oxidized rhizospheres, matted vegetation and algal mats. Soils in this wetland were silty sand and the color was 2.5Y6/2 with moderate redoximorphic concentrations.

## WETLAND EVALUATION

## Wetland Characterization

The wetland features were classified using both the Cowardin *et al.* (1979) and Mason County systems, as appropriate (Table 3). Mason County has specified under MCRO 17.01.070E that all wetlands located in Mason County will be rated under the *Washington State Wetlands Rating System for Western Washington* (Ecology 2004). The wetland rating forms for all wetlands on site are located in Appendix E. The proposed project will have moderate land use impact intensity since any new structures will be located on more than one acre and have a passive use that includes occasional maintenance. The buffers assigned by Mason County are depicted on the Wetland and Stream Buffer Map located in Appendix B-2.



	Area: Cowardin Rating System Mason County						
Wetland Feature	square feet (acre)	System	Class Water Regime		Rating	Required Buffer	
A-1	812,230 (18.65)	Palustrine	Forested	Seasonally Flooded	Category III	110 feet	
A-2	69,999 (1.61)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	
A-3	33,698 (0.77)	Palustrine	Emergent, Scrub-shrub	Seasonally Flooded	Category II	75 feet	
A-4	97,726 (2.24)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	
A-5	22,030 (0.51)	Palustrine	Emergent, Scrub-shrub	Permanently Flooded	Category III	60 feet	
В	19,832 (0.46)	Palustrine	Emergent, Scrub-shrub	Saturated	Category III	60 feet	
С	9,524 (0.22)	Palustrine	Emergent	Saturated	Category IV	40 feet	
D	16,644 (0.38)	Palustrine	Emergent, Scrub-shrub	Permanently Flooded	Category IV	40 feet	
E	17,599 (0.40)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	
F	2,097 (0.05)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	

Table 6. Categorization of Wetland Features



	Area:	Cowardin Rating System			Mason County	
Wetland Feature	square feet (acre)	System	Class	Water Regime	Rating	Required Buffer
G	3,890 (0.09)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
н	1,053 (0.02)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
I	1,944 (0.04)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
J	2,043 (0.05)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
к	607 (0.01)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
L	13,725 (0.32)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
М	1,387 (0.03)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
Ν	3,778 (0.09)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
0	7,736 (0.18)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
Р	1,218 (0.03)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
Q	26,401 (0.61)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
R	3,024 (0.07)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
S-1	153,879 (3.53)	Palustrine	Emergent, Scrub-shrub	Permanently Flooded	Category III	60 feet
S-2	10,333 (0.24)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
Т	9,961 (0.23)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet
U	2,073 (0.05)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet

Table 6. Categorization of Wetland Features (Continued)



	Area:	Cow	ardin Rating	System Mason		Mason County	
Wetland Feature	square feet (acre)	System	Class	Water Regime	Rating	Required Buffer	
V	8,456 (0.19)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	
W	1,480 (0.03)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	
X	1,142 (0.03)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	
Y	5,584 (0.13)	Palustrine	Emergent	Seasonally Flooded	Category IV	40 feet	

Table 6. Categorization of Wetland Features (Continued)

## Wetland Functional Assessment

GeoEngineers used the Wetland and Buffer Functions Semi-Quantitative Assessment Methodology (Cooke 2000) to determine the functions of the wetlands on site. Each individual function indicates its importance relative to the overall watershed system. Physical characteristics, topography, flow, site and watershed location, vegetation, species use and adjacent land use were considered in this assessment.

#### Wetland A-1

Wetland A-1 was assessed as a slope wetland for the purpose of this functional assessment. The following functional ratings were determined based on existing site conditions:

•	Flood/Stormwater Control	Medium
•	Base Flow/Groundwater Support	Medium
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	High
•	Natural Biological Support	High
•	General Habitat Functions	Medium
•	Specific Habitat Functions	High

Wetland A-1 has a high diversity of wetland classes and vegetation species within those classes. Dominant native vegetation provides valuable wildlife habitat and biological support. Primarily, water quality improvement and groundwater recharge are moderate functioning aspects of this wetland complex. Habitat functions are high due to an uninterrupted connection to estuarine and marine habitats.

## Wetland A-2

Wetland A-2 was assessed as a slope wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Medium
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland A-2 has a low diversity of wetland classes and vegetation species within those classes. The hayed emergent vegetation provides limited wildlife habitat and biological support. Primarily, water quality improvement and groundwater recharge are the greatest functioning aspects of this wetland complex. Habitat functions are low due to the disturbed nature of the wetland and surrounding buffers.

#### Wetland A-3

Wetland A-3 was assessed as a riverine wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Medium
•	Natural Biological Support	Medium
•	General Habitat Functions	Medium
•	Specific Habitat Functions	Medium

The structural diversity of this wetland provides a medium functional rating for wildlife habitat. It provides low water functions due to the narrow channel and lack of woody vegetation. There is a medium diversity of vegetation within the wetland and associated buffers.

#### Wetland A-4

Wetland A-4 was assessed as a slope wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low



Specific Habitat Functions
 Low

The lack of persistent vegetation in this wetland provides a low functional rating for wildlife habitat. The size of this wetland and its lack of connection to streams lower its potential for stormwater storage and support to hydrologic features to a low rating.

## Wetland A-5

Wetland A-5 was assessed as a depressional wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Medium
•	Base Flow/Groundwater Support	Medium
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Medium
•	Natural Biological Support	Medium
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland A-5 does not provide significant wildlife habitat due to the disturbed nature of the wetland and buffers. The groundwater support rating is medium due to the high water table and saturation of the ground year round. Water quality improvement and stormwater control ratings are medium due to the potential to reduce flows coming from the fields.

## Wetland B

Wetland B was assessed as a slope wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

٠	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Medium
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Medium
•	Natural Biological Support	Medium
•	General Habitat Functions	Medium
•	Specific Habitat Functions	Low

Wetland B provides moderate wildlife habitat even though it is located in an agricultural field. This wetland contains a forested canopy that partially connects to the Union River. This wetland helps slow down water velocity entering the wetland and recharges the shallow groundwater table. Therefore the rating for groundwater support and water quality improvement is medium.



#### Wetland C

Wetland C was assessed as a slope wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland C is a slope wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

#### Wetland D

Wetland D was assessed as a slope wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Medium
•	Base Flow/Groundwater Support	Medium
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Medium
•	Natural Biological Support	Medium
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland D does not provide significant wildlife habitat due to the disturbed nature of the wetland and buffers. The groundwater support rating is medium due to the high water table and saturation of the ground year round. Water quality improvement and stormwater control ratings are medium due to the potential to reduce flows coming from the fields.

#### Wetland E

Wetland E was assessed as a depressional wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low

• Base Flow/Groundwater Support Low



•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland E is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for having activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

#### Wetland F

Wetland F was assessed as a depressional wetland for the purpose of functional assessment. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland F is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland G

Wetland G was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low



Wetland G is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

#### Wetland H

Wetland H was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland H is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

#### Wetland I

Wetland I was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland I is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for having activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.



## Wetland J

Wetland J was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland J is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

# Wetland K

Wetland K was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland K is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland L

Wetland L was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low

• Base Flow/Groundwater Support Low



•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland L is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for having activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

# Wetland M

Wetland M was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland M is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland N

Wetland N was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low
	•	



Wetland N is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

# Wetland O

Wetland O was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland O is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland P

Wetland P was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland P is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for having activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.



# Wetland Q

Wetland Q was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland Q is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland R

Wetland R was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland R is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland S-1

Wetland S-1 was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Medium

Base Flow/Groundwater Support
 Medium



•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Medium
•	Natural Biological Support	Medium
•	General Habitat Functions	Medium
•	Specific Habitat Functions	Low
•	Cultural/Socioeconomic Functions	Low

Wetland S-1 does not provide significant wildlife habitat due to the disturbed nature of the wetland and buffers. The groundwater support rating is medium due to the high water table and saturation of the ground year round. Water quality improvement and stormwater control ratings are medium due to the potential to reduce flows coming from the fields.

# Wetland S-2

Wetland S-2 was assessed as a slope wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low
•	Cultural/Socioeconomic Functions	Low

Wetland S-2 is a slope wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland T

Wetland T was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low



•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland T is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

# Wetland U

Wetland U was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland U is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

# Wetland V

Wetland V was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland V is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for having activities. Due to the removal of vegetation annually, this wetland



provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland W

Wetland W was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland W is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## Wetland X

Wetland X was assessed as a depressional wetland for the purpose of this functional analysis. The following functional ratings were determined based on existing site conditions.

•	Flood/Stormwater Control	Low
•	Base Flow/Groundwater Support	Low
•	Erosion/Shoreline Protection	N/A
•	Water Quality Improvement	Low
•	Natural Biological Support	Low
•	General Habitat Functions	Low
•	Specific Habitat Functions	Low

Wetland X is a depressional wetland located in the agricultural field. The vegetation in the wetland is removed once a year for haying activities. Due to the removal of vegetation annually, this wetland provides low habitat value. The wetland is small in size providing minimal stormwater control, groundwater support and water quality functions.

## CONCLUSIONS

This report and associated maps serve to formally describe and characterize the wetlands and stream on site and their functions. The majority of the project site has been altered from its native condition through agricultural activities and the construction of a dike and drainage ditches. A total of 29 different wetland

areas were identified on site. The total wetland area located on site is estimated to be 31.1 acres. The majority of the wetlands are located in small topographic depressions in the agricultural fields. A combination of high groundwater table, seasonal precipitation and a confining layer near the surface has resulted in the creation of these wetlands. Wetland conditions were observed within the drainage ditches created to drain the fields. Water observed within these drainage ditches flow out during low tide events, but ponds at high tide when the tide gate closes. Many of the depressional wetlands associated with the agricultural fields appear to have no surface water connection to the ditches but may be connected through groundwater. The forested wetland observed on the eastern portion of the site extends off site and appears to connect to the Union River estuary.

Mindy Creek is the only natural stream feature that flows through the site. It originates off site and flows through the site and into the tidally influenced portion of the Union River. According to our interpretation of the Mason County Stream Rating System, we classified the on site portion of Mindy Creek as a type "F" water that requires a 150-foot buffer.

Wetlands and streams on site have been classified, rated and buffers identified according to Mason County regulations. GeoEngineers biologists performed habitat characterizations of the wetlands to identify areas of high and low-quality habitat in the wetland and surrounding buffer areas to identify buildable area on the site. Impacts to wetlands and buffers will be identified once the location of buildings, parking areas and the access road have been determined. These impacts and proposed mitigation measures will be identified in a separate mitigation report.

# LIMITATIONS

GeoEngineers has developed this Wetland Delineation Report in general accordance with the scope and limitations of our proposal within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted practices for Wetland Delineations in this area at the time this report was prepared.

This report has been prepared for the exclusive use of the Pacific Northwest Salmon Center, their authorized agents, and regulatory agencies following the described methods and information available at the time of the work. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. The information contained herein should not be applied for any purpose or project except the one originally contemplated.

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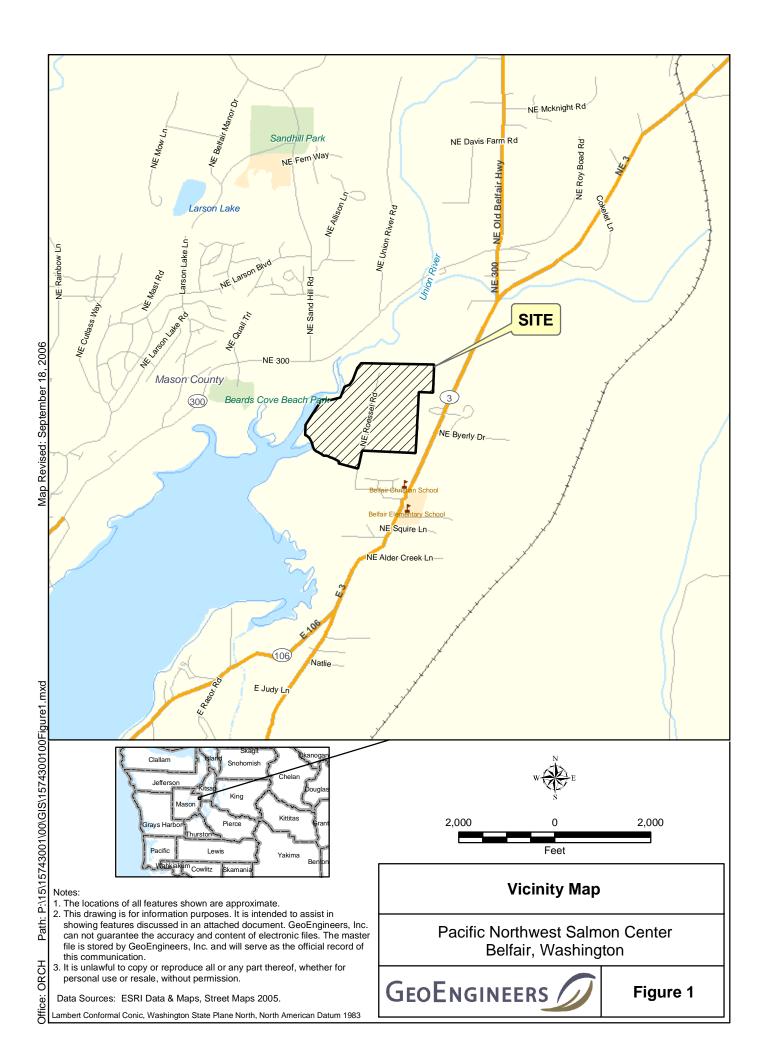


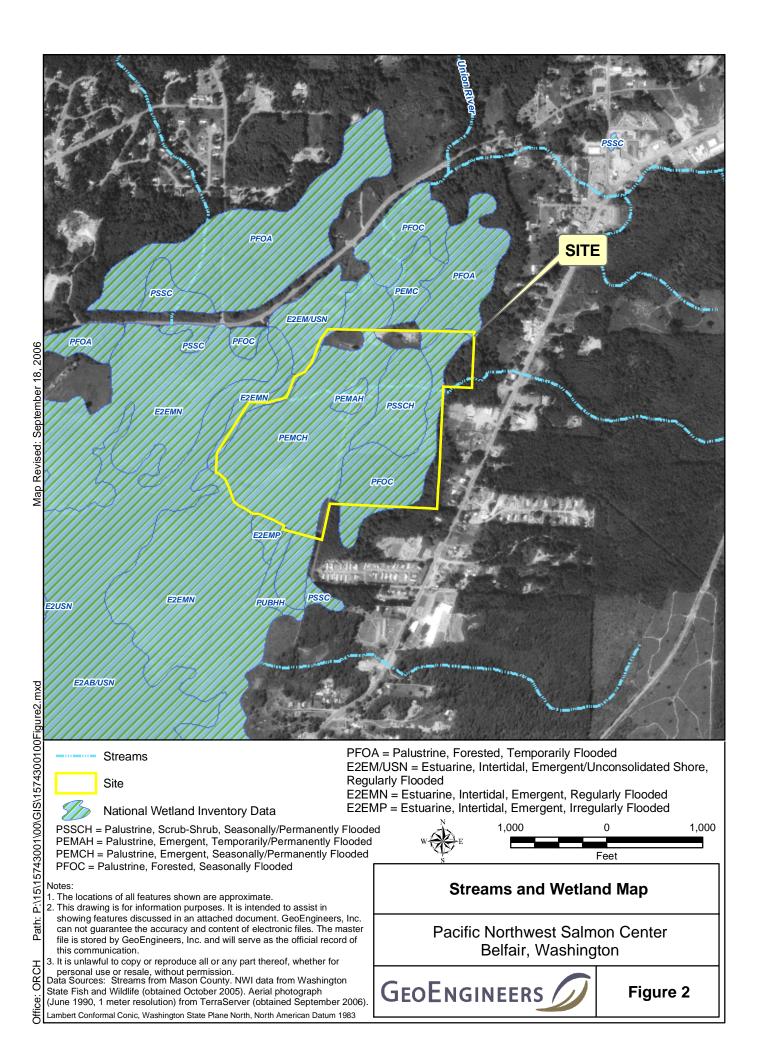
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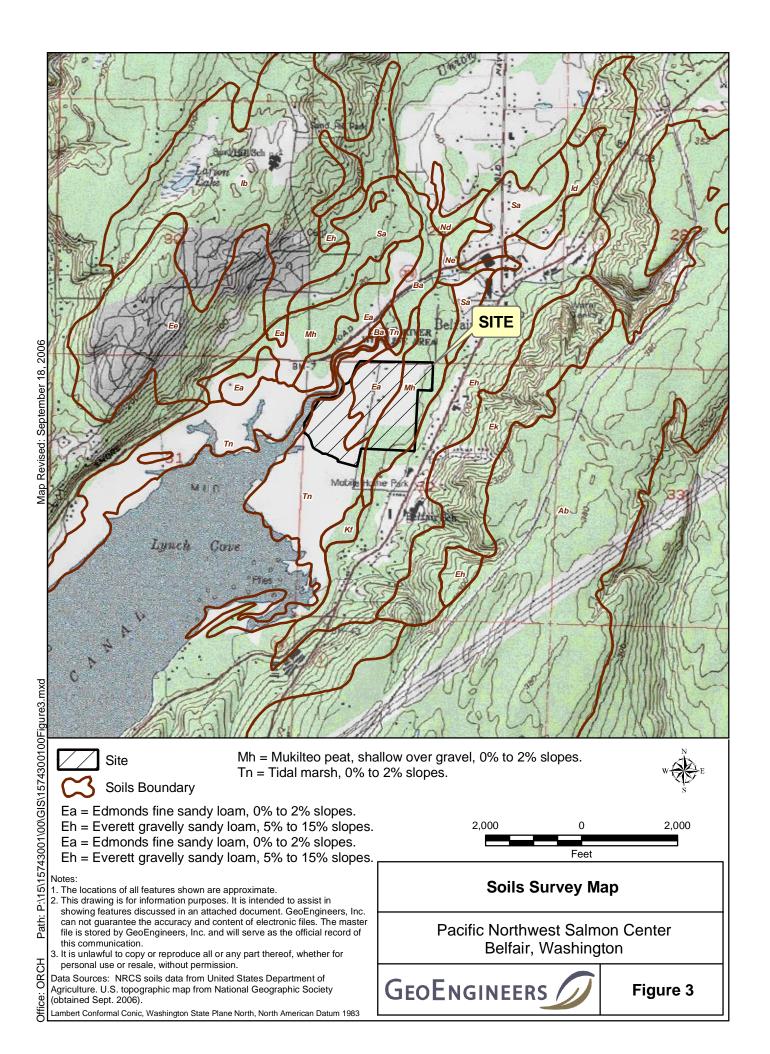


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# APPENDIX A SITE PHOTOGRAPHS

## APPENDIX A SITE PHOTOGRAPHS





Photograph 1 Wetland A along main road looking northeast

Photograph 2 Wetland A in field looking east



Photograph 3 Wetland A drainage ditch on east side of fields looking south



Photograph 4 Riparian portion of Wetland A associated with Mindy Creek





Photograph 5 Wetland A looking north next to drainage ditch in the field



Photograph 6 Wetland A looking east in northern field



Photograph 7 Northern drainage ditch running east to west in Wetland A looking east from road



Photograph 8 West side of Wetland B looking north







Photograph 9 Wetland B looking southeast at mature vegetation

Photograph 10 Wetland C looking west



Photograph 11 Wetland D looking west



Photograph 12 Wetland E looking west





Photograph 13 Wetland F





Photograph 15 Wetland H

Photograph 16 Wetland I





Photograph 17 Matted vegetation and algal mats in Wetland I

Photograph 18 Wetland J



Photograph 19 Wetland K



Photograph 20 Wetland L





Photograph 21

Wetland M



Photograph 22

Wetland N



Photograph 23 Wetland O



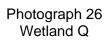
Photograph 24 Wetland P







Photograph 25 Matted vegetation, algal mat and silverweed in Wetland P





Photograph 27 Wetland R



Photograph 28 Wetland S in the southern portion of the site







Photograph 29 Wetland S in southwestern corner of site

Photograph 30 Wetland S next to tide gate



Photograph 31 Tide gate inlet in Wetland S



Photograph 32 Tide gate outlet in Union River





Photograph 33 Wetland S looking west



Photograph 34 Wetland S in the northern portion of the site in the field



Photograph 35 Wetland T



Photograph 36 Wetland U





Photograph 37 Wetland V



Photograph 38 Wetland W



Photograph 39 Wetland X



Photograph 40 Cleared drainage ditch in northern tip of S-1 looking west





Photograph 41 Cleared drainage ditch in Wetland A-5 looking south



Photograph 42 Cleared drainage ditch in Wetland D looking east



Photograph 43 Cleared drainage ditch in Wetland S-1 along Roessel Road looking north



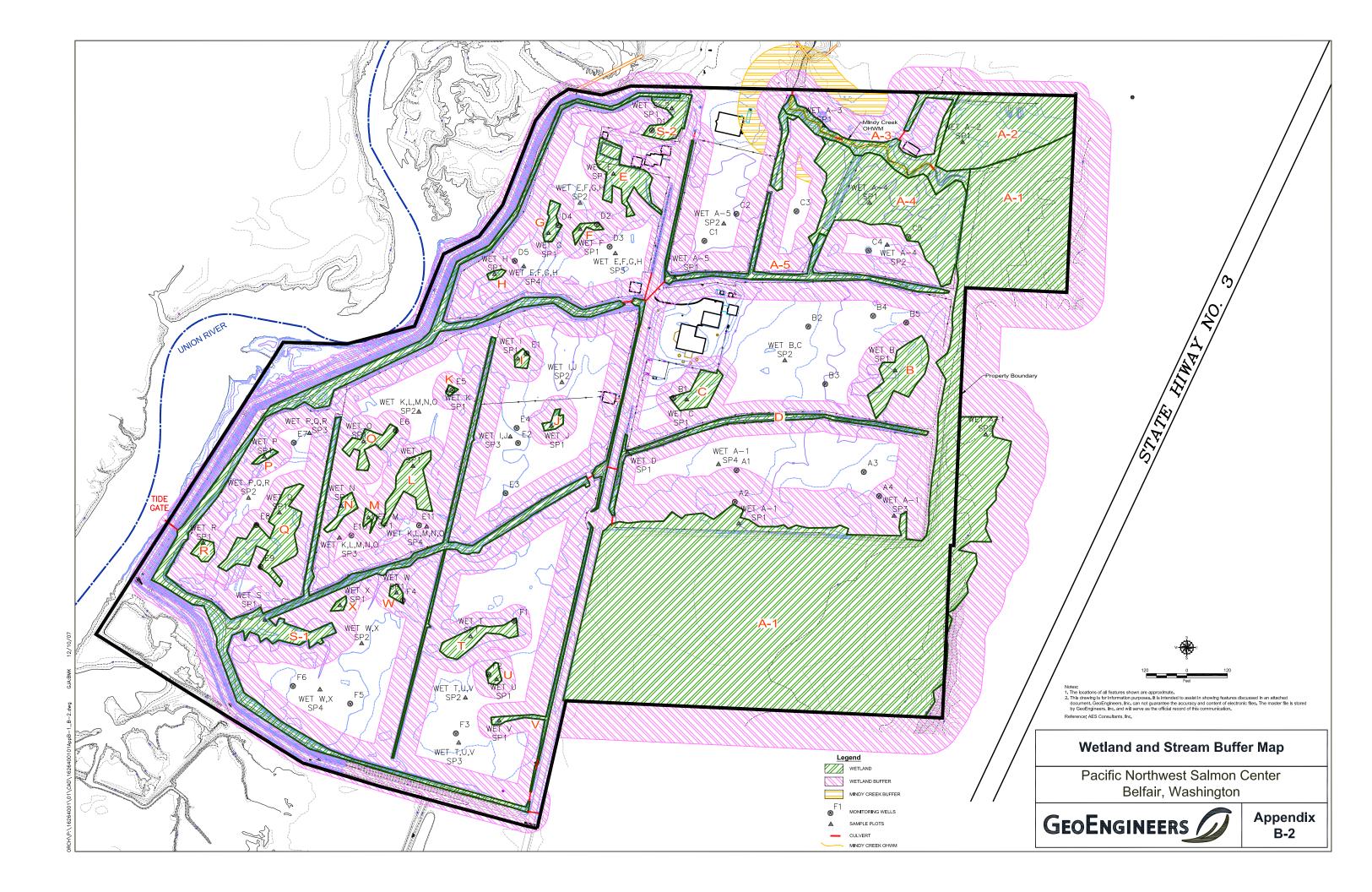
Photograph 44 Cleared area along Mindy Creek looking south





# **APPENDIX B** SITE MAPS







# **APPENDIX C** WETLAND DATA SHEETS

## **PNSC Wetland A -1**

Page	1

Project Name: PNSC Wetland A -1	Date: 06/18/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & SMM	Roll No:	Photo No:
Vac. Do Normal Circumstaneas evict on the site?	Lot /Long /	Datum: NAD83
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum. NAD63
No_ Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 37"	Dalum. NADos

## VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	HOLCUS LANATUS	Herb	FAC	20.00	Yes
2	EQUISETUM ARVENSE	Herb	FAC	20.00	Yes
3	JUNCUS EFFUSUS	Herb	FACW	20.00	Yes
4	RANUNCULUS REPENS	Herb	FACW	30.00	Yes
5	CAREX STIPATA	Herb	OBL	10.00	No
			_		
L		1			

Total Number of Speci	es: 5	Total Domina	nts:	4		
Percent of Dominants	that are Wetland Sp	becies: 50/20:	100.00		FAC(minus)- applied:	100.00
Prevalence Index:	2.30				FAC Neutral:	Yes

## HYDROLOGY

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

#### SOILS

Map Unit Na	ame.	Mulkiteo peat, shallow o	ver gravel Mh Dra	nage Class: very poorly dra	lined			
(Series and		•	0	d Observations				
Taxonomy (				Confirm Mapped Type? No				
Profile Desc								
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)			
0-8		10YR4/3	Sandy loam					
8-12		10YR4/2	Silt loam	Common	10YR5/6			
12-16		10YR4/1	Silt loam	Common	5YR4/6			
Hydric Soil	Indicat	ors:						
Histo	sol		Concretio	าร				
	c Epipe		0 0	nic Content in Surface Layer in S	Sandy Soils			
X Sulfic			0	treaking in Sandy Soils				
		ure Regime		X Listed on Local Hydric Soils List				
	•	onditions	Listed on	National Hydric Soils List				
X Gley	ed or Lo	ow-Chroma Colors	Organic P	an				
NRCS Field Indicators:				Other (Explain	in Remarks)			
	NETED	ΜΙΝΑΤΙΟΝ						

#### WETLAND DETERMINATION

Yes Hydrophytic Vegetation Present? Yes Wetland Hydrology Present? Yes Hydric Soils Present?	Yes Is this Sampling Point Within a Wetland? No Is this Sampling Point a Waters of the US?
	<u>No</u> Have the determination results been overridden by the user?

#### REMARKS

The portion of Wetland A-1 in the agricultural field has been historically hayed and the vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well A2 in the agricultural field.

Wetland X Yes	WoUS Yes	5	Species Richness
No	X No	2.30	Prevalence Index

#### **PNSC Wetland A -1**

Page	3
i uge	J

Project Name: PNSC Wetland A -1	Date: 06/18/2007	Time:
Sample Point Number: 2	County: Mason Roll No:	State: WA
Investigators: GJA & SMM	Roll No.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 38"	
No Is the site a potential Problem Area?	West: 122° 50' 02"	

## VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	LYSICHITON AMERICANUM	Herb	OBL	20.00	Yes
2	ATHYRIUM FILIX-FEMINA	Herb	FAC	25.00	Yes
3	RUBUS SPECTABILIS	Shrub	FAC+	10.00	Yes
4	ALNUS RUBRA	Tree	FAC	70.00	Yes
5	SALIX LASIANDRA	Tree	FACW+	20.00	Yes
6	OENANTHE SARMENTOSA	Herb	OBL	20.00	Yes
7	SCIRPUS MICROCARPUS	Herb	OBL	15.00	No
8	RANUNCULUS REPENS	Herb	FACW	20.00	Yes

Total Number of Species:	8	Total Dominant	s:	7		
Percent of Dominants tha	t are Wetland Species:	50/20:	100.00		FAC(minus)- applied:	100.00
Prevalence Index:	2.25				FAC Neutral:	Yes

## HYDROLOGY

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         X       Other         No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       3<4	Sediment Deposits         X       Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         X       Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

#### SOILS

(Series and	Map Unit Name:Mulkiteo peat, shallow over gravelMhDrainage Class:very poorly drainedSeries and Phase):0 to 2 percent slopesField ObservationsFaxonomy (Subgroup):mesic Terric MedisapristsConfirm Mapped Type?Yes							
Profile Desc	ription:							
Depth (inches)	Hz	Matrix Color (Munsell Moist)		, Concretions tructure	δ,		dox Feature lance/Contras	t Redox Color (Munsell Moist)
0-16		10YR2-2.5/1	S	ilt loam				
Histo Histo X Sulfio Aquio Redu X Gley	Hydric Soil Indicators:							
WETLAND DETERMINATION								
Yes H	Yes Hydrophytic Vegetation Present? Yes Is this Sampling Point Within a Wetland?							

 Yes
 Wetland Hydrology Present?
 No
 Is this Sampling Point a Waters of the US?

 Yes
 Hydric Soils Present?
 No
 Have the determination results been overridden by the user?

#### REMARKS

This sample point is located in the undisturbed, forested portion of the wetland to the east of the site.

 Wetland
 WoUS

 X
 Yes
 Yes

 No
 X
 No

 X
 No

 X
 No

 Yes
 8

 Species Richness

 2.25
 Prevalence Index

## **PNSC Wetland A -1**

Page	5

Project Name: PNSC Wetland A -1	Date: 06/18/2007	Time:
Sample Point Number: 3	County: Mason	State: WA
Investigators: GJA & SMM	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 37"	
No Is the site a potential Problem Area?	West: 122° 50' 06"	

## VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species		
1	HOLCUS LANATUS	Herb	FAC	25.00	Yes		
2	DACTYLIS GLOMERATA	Herb	FACU	25.00	Yes		
3	JUNCUS EFFUSUS	Herb	FACW	15.00	No		
4	ALOPECURUS PRATENSIS	Herb	FACW	10.00	No		
5	LOLIUM PERENNE	Herb	FACU	20.00	Yes		
			_				
		1					

Total Number of Specie	es: 5	Total Dominants	:	3		
Percent of Dominants t	hat are Wetland Specie	s: 50/20:	33.00		FAC(minus)- applied:	33.00
Prevalence Index:	3.21				FAC Neutral:	No

#### HYDROLOGY

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs         X       Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

#### SOILS

Map Unit Name:Mulkiteo peat, shallow over gravelMhDrainage Class:very poorly drained(Series and Phase):0 to 2 percent slopesField Observations								
Taxonomy (Subgroup):         mesic Terric Medisaprists         Confirm Mapped Type?         No								
Profile Desc	cription:							
Depth (inches)	Hz	Matrix Color (Munsell Moist)		Concretions ucture	3		lox Feature ance/Contrast	Redox Color (Munsell Moist)
0-16		10YR4/2						
Hydric Soil Indicators:								
WETLAND	DETER	MINATION						
No H	vdronhy	vtic Vegetation Prese	nt?	No la th	o Somolina I	Doint \\/ithi	in a Watland?	

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
No	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
_Yes	Hydric Soils Present?	No	Have the determination results been overridden by the user?

#### REMARKS

The portion of Wetland A-1 in the agricultural field has been historically hayed and the vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well A4 in the agricultural field.

Wetland Yes	WoUS Yes	5	Species Richness
XNo	XNo	3.21	Prevalence Index

#### **PNSC Wetland A -1**

Page	7

Project Name: PNSC Wetland A -1	Date: 06/18/2007	Time:
Sample Point Number: 4	County: Mason	State: WA
Investigators: GJA & SMM	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 39"	
No Is the site a potential Problem Area?	West: 122° 50' 12"	

## VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	DACTYLIS GLOMERATA	Herb	FACU	40.00	Yes
2	JUNCUS EFFUSUS	Herb	FACW	20.00	Yes
3	HOLCUS LANATUS	Herb	FAC	10.00	No
4	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	Yes

Total Number of Specie	es: 4	Total Dom	inants:	3		
Percent of Dominants t	hat are Wetland Sp	ecies: 50/20	: 33.00		FAC(minus)- applied:	33.00
Prevalence Index:	3.50				FAC Neutral:	No

### HYDROLOGY

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        XOther        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name (Series and Pha	ase): 0 to 2 percent slop	es	Drainage Class: Field Observations	very poorly draine	ed
Taxonomy (Sub	• • • •	edisaprists	Confirm Mappe	d Type? No	
Profile Descript					
(	Matrix Color Iz (Munsell Moist)	Texture, Concretion Structure		dox Feature dance/Contrast	Redox Color (Munsell Moist)
0-8	10YR4/3	Silt loam			
8-16	10YR4/2	Sandy loam		Few	10YR5/6
Reducing Gleyed c	bipedon Odor oisture Regime g Conditions or Low-Chroma Colors	H 0 <u>X</u> Li	oncretions igh Organic Content in S rganic Streaking in San sted on Local Hydric So sted on National Hydric rganic Pan	dy Soils bils List	
WETLAND DET					

	Hydrophytic Vegetation Present?	No_Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Ye	s_ Hydric Soils Present?	No Have the determination results been overridden by the user?

### REMARKS

The portion of Wetland A-1 in the agricultural field has been historically hayed and the vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well A1 in the agricultural field.

Wetland Yes	WoUS Yes	4	Species Richness
XNO	XNo	3.50	Prevalence Index

Ρ	age	1

Project Name: PNSC Wetland A-2	Date: 06/19/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & SMM	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Tes_ Do Normal Circumstances exist on the site?	Lat./Long	
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 48"	Datam. NADOS

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS EFFUSUS	Herb	FACW	30.00	Yes
2	HOLCUS LANATUS	Herb	FAC	20.00	Yes
3	CAREX OBNUPTA	Herb	OBL	20.00	Yes
4	RANUNCULUS REPENS	Herb	FACW	25.00	Yes
5	CAREX STIPATA	Herb	OBL	5.00	No

Total Number of Species: 5		Total Dominants	S:	4	
Percent of Dominants that are Wetland	Species:	50/20:	100.00	)	FAC(minus)- applied: 100.00
Prevalence Index: 1.95					FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       6<8	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na	ame:	Mukilte peat, shallo	w over gravel	Mh	Drainage (	Class:	very poorly drain	ed
(Series and	Phase)	: 0 to 2 percent slo	pes		Field Obse	ervations		
Taxonomy	Subgro	up): mesic Terric I	Medisaprists		Confirm	n Mapped	l Type? No	
Profile Desc	cription:							
Depth (inches)	Hz	Matrix Color (Munsell Moist)		, Concretion tructure	IS,		lox Feature ance/Contrast	Redox Color (Munsell Moist)
0-10		2.5Y5/1		amy sand				
10-16		2.5Y4/1	Loa	amy sand			Common	7.5YR5/8
Hydric Soil	Indicat	ors:						
Histo Histo X Sulfic Aquir Redu	osol c Epipe dic Odo c Moistu ucing Co	don		Hig Or Lis Lis	oncretions gh Organic Co ganic Streakin sted on Local H sted on Nation ganic Pan	ng in Sand Hydric Soi	ls List	ndy Soils
NRCS Field							Other (Explain i	n Remarks)
WETLAND								
Voc H	vdronhv	tic Vegetation Prese	nt?	Voc la th	nic Sompling E	Doint Mithi	n a Watland?	

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	$\_$ Have the determination results been overridden by the user?

### REMARKS

Wetland A-2 is located in the agricultural field and has been historically hayed. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	5	Species Richness
No	XNo	1.95	Prevalence Index

Page	1
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Project Name: PNSC Wetland A-3	Date: 06/19/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & SMM	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 48"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	CAREX OBNUPTA	Herb	OBL	55.00	Yes
2	ALNUS RUBRA	Shrub	FAC	20.00	Yes
3	ROSA NUTKANA	Shrub	FAC	30.00	Yes
4	JUNCUS EFFUSUS	Herb	FACW	20.00	Yes
5	PHALARIS ARUNDINACEA	Herb	FACW	15.00	No

Total Number of Speci	es: 5	٦	Total Dominants:	:	4		
Percent of Dominants	that are Wetland S	pecies:	50/20:	100.00	)	FAC(minus)- applied:	100.00
Prevalence Index:	1.96					FAC Neutral:	Yes

Recorded Data: Stream, Lake, or Tide Gauge Aerial Photographs Other	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches
X No Recorded Data Available	X Water Marks X Drift Lines
Field Observations: Depth of Surface Water: (in.) Depth to Free Water in Pit: (in.) Depth to Saturated Soil: <u>3&lt;4</u> (in.)	X       Sediment Deposits         X       Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         X       Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

		<b>E</b> 1 <i>C</i>		_	<u> </u>	<u>.</u>	poorly drained		
	Map Unit Name: Edmonds fine sandy loam			Ea	Drainage		poony urained		
(Series and	,	•	•			ervations			
Taxonomy (	Subgro	up): mesic, ortste	in Andic Duraquods		Confir	m Mappe	d Type? No		
Profile Desc	ription:								
Depth		Matrix Color	Texture, Co	oncretion	S.	Re	dox Feature	Redox Color	
(inches)	Hz	(Munsell Moist)	Struc		- ,		dance/Contrast	(Munsell Moist)	
0-16		10YR2-2.5/1							
Hydric Soil		ors:		0.					
Histo		-l.aa.	-		ncretions			adu Caila	
	: Epipeo		-		-		Surface Layer in Sa	nay Solis	
			-	Organic Streaking in Sandy Soils					
· · ·		ure Regime	-	X Listed on Local Hydric Soils List					
	•	onditions	-	Listed on National Hydric Soils List					
·		ow-Chroma Colors		Or	ganic Pan				
NRCS Field	Indicat	ors:					Other (Explain in	n Remarks)	
WETLAND	DETER								
								1	
Yes H	ydrophy	tic Vegetation Prese	ent?	es_Is th	is Sampling	Point With	in a Wetland?		

 Yes
 Wetland Hydrology Present?
 No
 Is this

 Yes
 Hydric Soils Present?
 No
 Have

# No Is this Sampling Point a Waters of the US? No Have the determination results been overridden by the user?

#### REMARKS

Wetland X Yes	WoUS Yes	5	Species Richness
No	X No	1.96	Prevalence Index

Ρ	a	qe	1

Project Name: PNSC Wetland A-4	Date: 06/19/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & SMM	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 46"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS EFFUSUS	Herb	FACW	45.00	Yes
2	ALOPECURUS PRATENSIS	Herb	FACW	20.00	Yes
3	HOLCUS LANATUS	Herb	FAC	20.00	Yes
4	CAREX LYNGBYEI	Herb	OBL	10.00	No
5	CAREX STIPATA	Herb	OBL	5.00	No
		1			

Total Number of Specie	es: 5	Т	Total Dominants	5:	3		
Percent of Dominants t	hat are Wetland Si	pecies:	50/20:	100.00	)	FAC(minus)- applied	: 100.00
Prevalence Index:	2.05					FAC Neutral:	Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Nam	e: Mukilteo peat, shallow	v over gravel Mh Draina	age Class: very poorly drain	ned				
(Series and Ph	nase): 0 to 2 percent slope	es Field	Observations					
Taxonomy (Su	ubgroup): mesic Terris Me	edisaprists Co	onfirm Mapped Type? No					
Profile Descrip	otion:							
Depth (inches)	Matrix Color Hz (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)				
0-8	10YR4/2	Loamy sand						
8-16	2.5Y4/1	Loamy sand	Common/Prominent	7.5YR5/8				
Hydric Soil Ind	dicators:			1				
Histoso	l	Concretions						
	pipedon	• • •	c Content in Surface Layer in Sa	andy Soils				
X_Sulfidic	Odor	•	Organic Streaking in Sandy Soils					
	loisture Regime		X Listed on Local Hydric Soils List					
	ng Conditions		Listed on National Hydric Soils List					
X_Gleyed	or Low-Chroma Colors	Organic Par						
NRCS Field In	dicators:		Other (Explain	in Remarks)				
WETLAND DE	TERMINATION							
Yes Hydi	rophytic Vegetation Present	? Yes Is this Sampli	ing Point Within a Wetland?					

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_ Have the determination results been overridden by the user?

### REMARKS

Wetland A-4 is located in the agricultural field and has been historically hayed. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	5	Species Richness
No	X No	2.05	Prevalence Index

Page	3
· age	<b>.</b>

Project Name: PNSC Wetland A-4	Date: 06/19/2007	Time:
Sample Point Number: 2 Investigators: GJA & SMM	County: Mason Roll No:	State: WA Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 46"	Datum. NADOS

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	Yes
2	DACTYLIS GLOMERATA	Herb	FACU	35.00	Yes
3	HOLCUS LANATUS	Herb	FAC	20.00	Yes
4	JUNCUS EFFUSUS	Herb	FACW	15.00	No

Total Number of Specie	es: 4	Total Domin	ants:	3		
Percent of Dominants t	hat are Wetland Spe	ecies: 50/20:	33.00		FAC(minus)- applied:	33.00
Prevalence Index:	3.50				FAC Neutral:	No

Recorded Data:	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary Indicators:
Aerial Photographs	Inundated
X Other	Saturated in Upper 12 inches
No Recorded Data Available	Water Marks
	Drift Lines
	Sediment Deposits
	Drainage Patterns in Wetlands
Field Observations:	Secondary Indicators (2 or more required):
Depth of Surface Water: (in.)	Oxidized Root Channels in Upper 12 inches
Depth to Free Water in Pit: (in.)	Water-Stained Leaves
Depth to Saturated Soil: (in.)	X Local Soil Survey Data
	FAC-Neutral Test
	Other (Explain in Remarks)

Map Unit Name (Series and Ph Taxonomy (Su	ase): 0 to 2 percent slo bgroup): mesic Terris	opes	Drainage Class: Field Observations Confirm Mappe		ed		
Profile Descrip	tion: Matrix Color				Redox Color		
Depth (inches) H	Hz (Munsell Moist)	Texture, Concretion Structure		edox Feature dance/Contrast	(Munsell Moist)		
0-10	10YR3/2	Loamy sand					
10-16	10YR4/3	Sandy loam					
Hydric Soil Inc Histosol Histic E			oncretions igh Organic Content in	Surface Layer in Sar	ndy Soils		
Sulfidic	Odor	0	rganic Streaking in Sar	idy Soils			
	loisture Regime		X Listed on Local Hydric Soils List				
	ng Conditions		sted on National Hydric	: Soils List			
Gleyed	or Low-Chroma Colors	0	rganic Pan				
NRCS Field In	dicators: 		_	Other (Explain in	Remarks)		
WETLAND DE	TERMINATION						

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

Wetland A-4 is located in the agricultural field and has been historically hayed. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well C4 in the agricultural field.

Wetland Yes	WoUS Yes	4	Species Richness
XNo	X No	3.50	Prevalence Index

Ρ	age	1

Project Name: PNSC Wetland A-5	Date: 06/20/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 44"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	SCIRPUS ACUTUS	Herb	OBL	20.00	Yes
2	TYPHA LATIFOLIA	Herb	OBL	50.00	Yes
3	ALOPECURUS PRATENSIS	Herb	FACW	10.00	No
4	ROSA NUTKANA	Shrub	FAC	20.00	Yes
5	EQUISETUM ARVENSE	Herb	FAC	15.00	No
L		1	1		

Total Number of Specie	s: 5	Total Domina	ints:	3		
Percent of Dominants th	nat are Wetland Spe	ecies: 50/20:	100.00	)	FAC(minus)- applied:	100.00
Prevalence Index:	1.70				FAC Neutral:	Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: <u>X</u> Inundated <u>X</u> Saturated in Upper 12 inches <u>X</u> Water Marks <u>X</u> Drift Lines
Field Observations:3<4(in.)Depth of Surface Water:3<4	X       Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         X       Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

1

### SOILS

[m									
Map Unit Na	ame:	Edmonds fine sand	ly loam Ea		01000.	poorly drained			
(Series and	Phase)	: 0 to 2 percent sl	opes	Field Obs	servations				
Taxonomy (	Subgro	up): mesic ortstei	n Andic Duroquads	Confi	rm Mapped T	Гуре? No			
Profile Desc	cription:								
Depth		Matrix Color	Texture, Concret	ions,	Redo	x Feature	Redox Color		
(inches)	Hz	(Munsell Moist)	Structure		Abundar	nce/Contrast	(Munsell Moist)		
0-16		10YR2-2.5/1							
Hydric Soil	Indicate	ors:							
Histo	sol			Concretions					
	c Epipeo			High Organic Content in Surface Layer in Sandy Soils					
X Sulfic				Organic Streaking in Sandy Soils					
· · · ·		ure Regime	X	X Listed on Local Hydric Soils List					
	•	onditions		Listed on National Hydric Soils List					
		ow-Chroma Colors		Organic Pan					
NRCS Field Indicators:					_Other (Explain ir	n Remarks)			
WETLAND	DETER	MINATION							
Yes H	ydrophy	tic Vegetation Prese	ent? Yes I	s this Sampling	Point Within	a Wetland?			

 Yes
 Wetland Hydrology Present?
 No
 Is this Sampling Point a Waters of the US?

 Yes
 Hydric Soils Present?
 No
 Have the determination results been overridden by the user?

#### REMARKS

This sample point is located in the agricultural drainage ditch constructed for drainage of the fields.

 Wetland
 WoUS

 X
 Yes
 5
 Species Richness

 No
 X
 No
 1.70
 Prevalence Index

Page	3
	<b>.</b>

Project Name: PNSC Wetland A-5	Date: 06/20/2007	Time:
Sample Point Number: 2 Investigators: GJA & KAB	County: Mason Roll No:	State: WA Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
	5	
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 46"	

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	DACTYLIS GLOMERATA	Herb	FACU	20.00	Yes
2	ANTHOXANTHUM ODORATUM	Herb	FACU	25.00	Yes
3	TRIFOLIUM PRATENSE	Herb	FACU	45.00	Yes
4	HOLCUS LANATUS	Herb	FAC	10.00	No

Total Number of Specie	es: 4	Total Dominants	5:	3		
Percent of Dominants t	hat are Wetland Speci	es: 50/20:	0.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.90				FAC Neutral:	No

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na	ame:	Edmonds fine sandy	loam	Ea	Drainage	Class:	poorly drained	
(Series and	(Series and Phase): 0 to 2 percent slopes				Field Obs	ervations		
Taxonomy	Subgro	oup): mesic ortstein	n Andic Duroquads		Confin	m Mappe	d Type? No	
Profile Desc	cription:							
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure		s, Redox Feature Abundance/Contrast		Redox Color (Munsell Moist)	
0-8		10YR3/2	Loamy sa	Loamy sand				
8-16		10YR4/3	Sandy lo	am				
Hydric Soil	Indicat	ors:						
Histo		013.		Co	ncretions			
	c Epipe	don		High Organic Content in Surface Layer in Sandy Soils				
	dic Odo				ganic Streaki		-	· <b>)</b>
Aqui	c Moisti	ure Regime		X Listed on Local Hydric Soils List				
		onditions		Listed on National Hydric Soils List				
Gley	ed or Lo	ow-Chroma Colors		Organic Pan				
NRCS Field	I Indicat	tors:			-		Other (Explain i	n Remarks)
								·
L								
WETLAND	DETER	MINATION						
		<i></i>	12					

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

Wetland A-5 is located in the agricultural drainage ditch. This sample point is located in the upland field to the north of the drainage ditch.	
Recorded hydrology data for this sample point included shallow groundwater monitoring wells C1 and C2 in the agricultural field.	

Wetland Yes	WoUS Yes	4	Species Richness
X No	X No	3.90	Prevalence Index

Project Name: PNSC Wetland B	Date: 06/18/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA & SMM	NUI NO.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 41"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ALNUS RUBRA	Tree	FAC	80.00	Yes
2	RUBUS SPECTABILIS	Shrub	FAC+	30.00	Yes
3	SPIRAEA DOUGLASII	Shrub	FACW	30.00	Yes
4	EQUISETUM ARVENSE	Herb	FAC	20.00	Yes
5	MAIANTHEMUM DILATATUM	Herb	FAC	60.00	Yes
6	LYSICHITON AMERICANUM	Herb	OBL	5.00	No

Total Number of Species	6	Total Dominants	s: :	5		
Percent of Dominants the	at are Wetland Species	: 50/20:	100.00		FAC(minus)- applied:	100.00
Prevalence Index:	2.82				FAC Neutral:	Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na	me:	Mulkiteo Peat, shallo	w over gravel	Mh	Drainage	Class:	very poorly drain	ed
(Series and I	Phase):	0 to 2 percent slop	bes		Field Obs	ervations		
Taxonomy (S	Subgrou	up): mesic Terric N	ledisaprists		Confir	m Mappe	d Type? No	
Profile Desci	ription:							
Depth		Matrix Color	Texture, Co	oncretions	5,	Re	dox Feature	Redox Color
(inches)	Hz	(Munsell Moist)	Struc	ture		Abun	dance/Contrast	(Munsell Moist)
0-16		10YR3/1	Silt lo	bam				
Hydric Soil I	ndicato	ors:						
Histos	sol		_	Co	ncretions			
	Epiped		_	`	•		Surface Layer in Sa	ndy Soils
X_Sulfid			_		janic Streaki	•	•	
		re Regime	-		ed on Local			
	•	Inditions	-		ed on Natior	hal Hydric	Soils List	
		w-Chroma Colors		Orę	janic Pan		<b>.</b>	
NRCS Field	Indicate	ors:					Other (Explain in	n Remarks)
WETLAND D	ETERN	MINATION						
Yes Hy	drophy	tic Vegetation Presen	t? Y	es Is th	s Sampling	Point With	nin a Wetland?	

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	Have the determination results been overridden by the user?

#### REMARKS

Wetland B is located in both the agricultural field and a forested portion of the site. The vegetation has been removed in the agricultural field every year for the past 20+ years.

Wetland X Yes	WoUS Yes	6	Species Richness
No	X No	2.82	Prevalence Index

Project Name: PNSC Wetland C	Date: 06/19/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA & SMM	KUII NU.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 40"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	EQUISETUM ARVENSE	Herb	FAC	10.00	Yes
2	ANTHOXANTHUM ODORATUM	Herb	FACU	10.00	Yes
3	HOLCUS LANATUS	Herb	FAC	10.00	Yes
4	ALOPECURUS PRATENSIS	Herb	FACW	40.00	Yes
5	RANUNCULUS ACRIS	Herb	FACW-	10.00	Yes
			1		

Total Number of Speci	es:	5	Total Dom	inants:	5		
Percent of Dominants	that are V	Vetland Species:	50/20	: 80.00		FAC(minus)- applied:	80.00
Prevalence Index:	2.50					FAC Neutral:	Yes

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs         X       Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

ervations n Mapped Type? No Redox Feature Abundance/Contrast Common	Redox Color (Munsell Moist) 7.5YR5/8
Redox Feature Abundance/Contrast	(Munsell Moist)
Abundance/Contrast	(Munsell Moist)
Abundance/Contrast	(Munsell Moist)
Common	7.5YR5/8
Common	7.5YR5/8
ontent in Surface Layer in Sa ng in Sandy Soils Hydric Soils List al Hydric Soils List	
Other (Explain ii	n Remarks)
	ig in Sandy Soils Hydric Soils List

Yes Hydrophytic Vegetation Present?	Yes_Is this Sampling Point Within a Wetland?
Yes Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland C is located in the agricultural field and has been historically hayed. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well B1 in the agricultural field.

Wetland X Yes	WoUS Yes	5	Species Richness
No	X No	2.50	Prevalence Index

Project Name: PNSC Wetlands E, F, G & H Upland	Date: 06/21/2007	Time:
Sample Point Number: 2	County: Mason Roll No:	State: WA Photo No:
Investigators: GJA & KAB	Noil NO.	Photo No.
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)? Is the site a potential Problem Area?	Lat./Long.: North: 47° 26' 46" West: 122° 50' 19"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	Yes
2	DACTYLIS GLOMERATA	Herb	FACU	20.00	Yes
3	FESTUCA ARUNDINACEA	Herb	FAC-	10.00	No
4	HOLCUS LANATUS	Herb	FAC	20.00	Yes
5	LOLIUM PERENNE	Herb	FACU	20.00	Yes
		1			

Total Number of Specie	es: 5	Total Domin	ants:	4		
Percent of Dominants th	nat are Wetland Sp	ecies: 50/20:	25.00		FAC(minus)- applied:	25.00
Prevalence Index:	3.70				FAC Neutral:	No

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        XOther        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

		Edmonds fine sandy	loam	<u>Га</u>	Drainage C	laaa	poorly drained	
Map Unit Na				Ea	Drainage C Field Obser		poony aramou	
(Series and	,	•	•					
Taxonomy (		• •	n Andic Duraquods		Confirm	маррес	d Type? No	
Profile Desc	ription:							
Depth		Matrix Color	Texture, Cor	ncretion	s,	Red	dox Feature	Redox Color
(inches)	Hz	(Munsell Moist)	Struct	ure		Abunc	lance/Contrast	(Munsell Moist)
0-10		10YR4/2	Loamy s	sand				
10-16		10YR6/3	Sandy I	oam				
Hydric Soil	Indicat	ors:						
Histo	sol		_	Co	oncretions			
Histic	c Epipe	don	_	Hig	gh Organic Con	ntent in S	Surface Layer in Sa	ndy Soils
Sulfic	dic Odo	r	_	Or	ganic Streaking	g in Sand	dy Soils	
Aquio	c Moistu	ure Regime	_	X Lis	ted on Local H	ydric So	ils List	
Redu	icing Co	onditions	_	Lis	sted on Nationa	I Hydric	Soils List	
Gley	ed or Lo	ow-Chroma Colors		Or	ganic Pan			
NRCS Field	Indicat	ors:	-		-		Other (Explain ir	n Remarks)
							```	,
<u> </u>								
WETLAND	DETER	MINATION						
		tie Verstetien Dress						

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

This sample point is located in the agricultural field and has been historically hayed. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring wells B2 and B3 in the agricultural field.

Wetland	WoUS	5	Creating Diskness
Yes	Yes	5	Species Richness
X No	X No	3.70	Prevalence Index

Project Name: PNCS Wetland D	Date: 06/20/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 38"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	TYPHA LATIFOLIA	Herb	OBL	50.00	Yes
2	SALIX SITCHENSIS	Tree	FACW	20.00	Yes
3	EQUISETUM ARVENSE	Herb	FAC	20.00	Yes
4	JUNCUS EFFUSUS	Herb	FACW	20.00	Yes
5	ALNUS RUBRA	Tree	FAC	20.00	Yes

Total Number of Specie	es: 5	Total Domina	ants:	5		
Percent of Dominants th	hat are Wetland Sp	ecies: 50/20:	100.00	FAC(m	inus)- applied:	100.00
Prevalence Index:	1.92			F	AC Neutral:	Yes

Recorded Data:          Stream, Lake, or Tide Gauge          Aerial Photographs          Other        X       No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <u>X</u> Inundated <u>X</u> Saturated in Upper 12 inches <u>X</u> Water Marks Drift Lines
Field Observations:6<8(in.)Depth of Surface Water:6<8	Sediment Deposits         X       Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         X       Water-Stained Leaves         Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

(r								
Map Unit Na	me: E	dmonds fine sandy lo	am Ea	Drainage Class:	poorly drained			
(Series and F	Phase):	0 to 2 percent slopes	S	Field Observation	าร			
Taxonomy (S	Subgroup)	: mesic, ortstein A	ndic Duraquods	Confirm Map	oed Type? No			
Profile Descr	ription:							
Depth		Matrix Color	Texture, Concretion	s, l	Redox Feature	Redox Color		
(inches)	Hz	(Munsell Moist)	Structure		undance/Contrast	(Munsell Moist)		
0-16		10YR2-2.5/1	Silt loam					
Hydric Soil I	Indicators	I						
Histos			Co	ncretions				
Histic	Epipedon		High	gh Organic Content i	n Surface Layer in Sa	ndy Soils		
X Sulfidi	ic Odor			Organic Streaking in Sandy Soils				
Aquic	Moisture	Regime	X Lis	X Listed on Local Hydric Soils List				
Reduc	cing Cond	itions	Lis	Listed on National Hydric Soils List				
X Gleye	d or Low-	Chroma Colors	Or	ganic Pan				
NRCS Field	Indicators	:		_	Other (Explain ir	n Remarks)		
WETLAND D	DETERMIN	ATION						
Yes Hy	drophytic	Vegetation Present?	Yes Is the	is Sampling Point W	ithin a Wetland?			

 Yes
 Hydrophytic Vegetation Present?
 Yes
 Is this Sampling Point Within a Wetland?

 Yes
 Wetland Hydrology Present?
 No
 Is this Sampling Point a Waters of the US?

 Yes
 Hydric Soils Present?
 No
 Have the determination results been overridden by the user?

#### REMARKS

Wetland D is located in the drainage ditch which drains the agricultural fields.	There is standing water in this ditch year
round.	

Wetland X Yes	WoUS Yes	5	Species Richness
No	XNo	1.92	Prevalence Index

Project Name: PNSC Wetland E	Date: 06/21/2007	Time:
Sample Point Number: 1 Investigators: GJA & KAB	County: Mason Roll No:	State: WA Photo No:
		1 11010 110.
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 47"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS EFFUSUS	Herb	FACW	20.00	Yes
2	JUNCUS BALTICUS	Herb	FACW+	25.00	Yes
3	CAREX OBNUPTA	Herb	OBL	20.00	Yes
4	ALOPECURUS PRATENSIS	Herb	FACW	20.00	Yes
5	POTENTILLA ANSERINA	Herb	OBL	15.00	No
		1	1		

Total Number of Species:	5	Total Dominants	5:	4		
Percent of Dominants that are W	/etland Species:	50/20:	100.00		FAC(minus)- applied:	100.00
Prevalence Index: 1.65					FAC Neutral:	Yes

Recorded Data:	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary Indicators:
Aerial Photographs	
Other	X Saturated in Upper 12 inches
X No Recorded Data Available	Water Marks
	Drift Lines
	Sediment Deposits
	X Drainage Patterns in Wetlands
Field Observations:	Secondary Indicators (2 or more required):
Depth of Surface Water: (in.)	X Oxidized Root Channels in Upper 12 inches
Depth to Free Water in Pit: (in.)	Water-Stained Leaves
Depth to Saturated Soil: 3<4 (in.)	X Local Soil Survey Data
	X FAC-Neutral Test
	Other (Explain in Remarks)

Map Unit Nar		Edmonds fine sandy loar		age Class: poorly drained	
Series and F	,			Observations	
Taxonomy (S	Subgro	up): mesic, ortstein An	dic Duraquods Co	onfirm Mapped Type? No	
Profile Descri	iption:				
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-8		2.5YR4/1	Loamy sand		
8-16		2.5YR5/2	Loamy sand	Many	7.5YR5/6
Hydric Soil I	ndicat	oro:			
Histos		015.	Concretions		
Histic		don		, ic Content in Surface Layer in Sa	andy Soils
Sulfidi			1 1	eaking in Sandy Soils	
		ure Regime	•	ocal Hydric Soils List	
		onditions		ational Hydric Soils List	
	•	ow-Chroma Colors	Organic Par	-	
NRCS Field I				Other (Explain i	n Remarks)
WETLAND D	ETER				
		/tic Vegetation Present?	Yes ls this Samnl	ing Point Within a Wetland?	

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
_Yes_	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

Wetland E is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	_5	Species Richness
No	XNO	1.65	Prevalence Index

Project Name: PNSC Wetland F	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA & KAB	Rui Nu.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 45"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	CAREX OBNUPTA	Herb	OBL	20.00	Yes
2	ALOPECURUS PRATENSIS	Herb	FACW	80.00	Yes

Total Number of Species: 2	Total Dominants:	2
Percent of Dominants that are Wetland Specie	es: 50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.80		FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary Indicators:
Aerial Photographs	Inundated
X Other	X Saturated in Upper 12 inches
No Recorded Data Available	Water Marks
	Drift Lines
	Sediment Deposits
	Drainage Patterns in Wetlands
Field Observations:	Secondary Indicators (2 or more required):
Depth of Surface Water: (in.)	X Oxidized Root Channels in Upper 12 inches
Depth to Free Water in Pit: (in.)	X Water-Stained Leaves
Depth to Saturated Soil: 3<4 (in.)	X Local Soil Survey Data
	X FAC-Neutral Test
	Other (Explain in Remarks)

	dmonds fine sandy loa		nage Class: poorly drained	
Series and Phase):	0 to 2 percent slopes		Observations	
[axonomy (Subgroup)	: mesic, ortstein An	dic Duraquods C	Confirm Mapped Type? No	
Profile Description:				
Depth (inches) Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-10	2.5YR4/2	Loamy sand		
10-16	2.5YR5/1	Loamy sand	Common	7.5YR5/8
Hydric Soil Indicators Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Reducing Cond X Gleyed or Low-	Regime itions Chroma Colors	Organic St X Listed on L	nic Content in Surface Layer in Sa reaking in Sandy Soils .ocal Hydric Soils List lational Hydric Soils List an	
VRCS Field Indicators			Other (Explain	in Remarks)

	Yes Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
	Yes Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
-	Yes Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland F is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well D2 in the agricultural field.

Wetland X Yes	WoUS Yes	2	Species Richness
No	X No	1.80	Prevalence Index

Project Name: PNSC Wetland G	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA & KAB	RUII NO.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 45"	Datum: NAD83

5.00         No           0.00         Yes           5.00         Yes
5.00 Yes
0.00 No
-

Total Number of Species:	4	Total Dominants	:	2	
Percent of Dominants tha	t are Wetland Species:	50/20:	100.00		FAC(minus)- applied: 100.00
Prevalence Index:	1.90				FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       5<6	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Nar		Edmonds fine sandy loar	n Ea	Drainage Clas		
(Series and P				Field Observa		
Taxonomy (S		p): mesic, orstein And	lic Duraquods	Confirm N	lapped Type? No	
Profile Descri	iption:					
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions Structure		Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-10		2.5Y5/2	Loamy sand			
10-16		2.5Y4/1	Loamy sand		Common	7.5YR5/6
Hydric Soil Ir	ndicato	re:				
Histos Histic I Sulfidio Aquic I Reduc X Gleyeo	ol Epiped c Odor Moistui cing Col d or Lov	on re Regime nditions w-Chroma Colors	Hig Org X List	ncretions Jh Organic Conte ganic Streaking ii ted on Local Hyd ted on National H ganic Pan	lric Soils List Iydric Soils List	
NRCS Field I					Other (Explain i	

Yes	Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland G is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well D4 in the agricultural field.

Wetland _XYes	WoUS Yes	4	Species Richness
No	X No	1.90	Prevalence Index

Project Name: PNSC Wetland H	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA & KAB	RUII INO.	Photo No:
Vac De Nermel Circumsteness evict on the site?	Lot /Long L	Datum: NAD83
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum. NADos
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 44"	Datum. NADos

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS EFFUSUS	Herb	FACW	15.00	No
2	JUNCUS BALTICUS	Herb	FACW+	30.00	Yes
3	ALOPECURUS PRATENSIS	Herb	FACW	30.00	Yes
4	POTENTILLA ANSERINA	Herb	OBL	10.00	No
5	RANUNCULUS ACRIS	Herb	FACW-	15.00	No
			_		
L		1			

Total Number of Specie	es: 5	Total Domin	ants:	2		
Percent of Dominants th	hat are Wetland Sp	becies: 50/20:	100.0	0	FAC(minus)- applied:	100.00
Prevalence Index:	1.90				FAC Neutral:	Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       5<6	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Nam		Edmonds fine sany loam		nage Class: poorly drained	
Series and P			Field	Observations	
Taxonomy (S	ubgrou	up): mesic, ortstein An	dic Duraquods 0	Confirm Mapped Type? No	
Profile Descri	ption:				
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-10		2.5YR5/2	Loamy sand		
10-16		2.5YR4/1	Loamy sand	Common	7.5YR5/6
Lhudria Cail In	a di a a ta				
Hydric Soil In Histoso		JIS.	Concretior		
Histic E		lon		nic Content in Surface Layer in Sa	andy Soils
Sulfidic	•••		0 0	reaking in Sandy Soils	
		re Regime	0	Local Hydric Soils List	
		Inditions		National Hydric Soils List	
	•	w-Chroma Colors	Organic Pa	-	
NRCS Field Ir				Other (Explain i	n Remarks)
				、 、	,
WETLAND DE	ETERN	MINATION			
Yes Hyd	drophy	tic Vegetation Present?	Yes Is this Sam	bling Point Within a Wetland?	

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	-Have the determination results been overridden by the user?

### REMARKS

Wetland H is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	Yes 5		
No	X No	1.90	Prevalence Index	

Project Name: PNSC Wetlands E, F, G & H Upland	Date: 06/21/2007	Time:
Sample Point Number: 2	County: Mason Roll No:	State: WA Photo No:
Investigators: GJA & KAB	Noil NO.	Photo No.
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)? Is the site a potential Problem Area?	Lat./Long.: North: 47° 26' 46" West: 122° 50' 19"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	Yes
2	DACTYLIS GLOMERATA	Herb	FACU	20.00	Yes
3	FESTUCA ARUNDINACEA	Herb	FAC-	10.00	No
4	HOLCUS LANATUS	Herb	FAC	20.00	Yes
5	LOLIUM PERENNE	Herb	FACU	20.00	Yes
		1			

Total Number of Specie	es: 5	Total Domin	ants:	4		
Percent of Dominants th	nat are Wetland Sp	ecies: 50/20:	25.00		FAC(minus)- applied:	25.00
Prevalence Index:	3.70				FAC Neutral:	No

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        XOther        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

No Hydrophytic Vegetation Present	? No Is this Sampling Point Within a Wetland?					
WETLAND DETERMINATION						
Hydric Soil Indicators:       Concretions         Histosol       High Organic Content in Surface Layer in Sandy Soils         Sulfidic Odor       Organic Streaking in Sandy Soils         Aquic Moisture Regime       X         Reducing Conditions       Listed on Local Hydric Soils List         Gleyed or Low-Chroma Colors       Organic Pan         NRCS Field Indicators:       Other (Explain in Remarks)						
	Image: Constraint of the second sec					
10-16 10YR6/3	Sandy loam					
Depth (inches)Matrix Color Hz0-1010YR4/2	Texture, Concretions, StructureRedox Feature Abundance/ContrastRedox Color (Munsell Moist)Loamy sand					
Profile Description:						
(Series and Phase): 0 to 2 percent slop Taxonomy (Subgroup): mesic, orstein /	es Field Observations Andic Duraquods Confirm Mapped Type? No					
Map Unit Name: Edmonds fine sandy le	5					

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
No	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	Have the determination results been overridden by the user?

# REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland

X No

Yes

WoUS Yes X No

5 Species Richness 3.70 Prevalence Index

Project Name: PNSC Wetlands E, F, G & H Upland	Date: 06/21/2007	Time:
Sample Point Number: 3 Investigators: GJA & KAB	County: Mason Roll No:	State: WA Photo No:
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 45"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	20.00	Yes
2	DACTYLIS GLOMERATA	Herb	FACU	25.00	Yes
3	FESTUCA ARUNDINACEA	Herb	FAC-	20.00	Yes
4	LOLIUM PERENNE	Herb	FACU	15.00	No
5	TRIFOLIUM PRATENSE	Herb	FACU	20.00	Yes

Total Number of Species	: 5	Total Domina	nts:	4		
Percent of Dominants that	at are Wetland Spec	es: 50/20:	25.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.80				FAC Neutral:	No

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name:	Edmonds fine sandy loam	Ea	Drainage Class:	poorly drained			
(Series and Phase): 0 to 2 percent slopes Field Observations							
Taxonomy (Subgroup): mesic, orstein Andic Duraquods Confirm Mapped Type? No							
Profile Description:	• /			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Depth (inches) Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure		edox Feature ndance/Contrast	Redox Color (Munsell Moist)		
0-9	2.5Y4/2	Loamy sand					
9-16	2.5Y4/3	Sandy loam		Few	2.5Y5/6		
Hydric Soil Indicators:       Concretions         Histosol       —         Histic Epipedon       —         Sulfidic Odor       —         Aquic Moisture Regime       X         Reducing Conditions       —         Gleyed or Low-Chroma Colors       —         NRCS Field Indicators:       —         —       —							
WETLAND DETER	MINATION						

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed

every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well D3 in the agricultural field.

Wetland	WoUS		
Yes	Yes	5 Species	Richness
X No	X No		nce Index

Project Name: PNSC Wetlands E, F, G & H Upland	Date: 06/21/2007	Time:
Sample Point Number: 4 Investigators: GJA & KAB	County: Mason Roll No:	State: WA Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 44"	Datam. Wibbo

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	FESTUCA ARUNDINACEA	Herb	FAC-	30.00	Yes
2	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	Yes
3	DACTYLIS GLOMERATA	Herb	FACU	20.00	Yes
4	RANUNCULUS ACRIS	Herb	FACW-	20.00	Yes

Total Number of Speci	es: 4	Total	I Dominants	:	4		
Percent of Dominants t	that are Wetland Sp	pecies:	50/20:	50.00		FAC(minus)- applied:	25.00
Prevalence Index:	3.30					FAC Neutral:	No

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Nam (Series and Ph Taxonomy (Su	ase): 0 to 2 percent slop	pes Field	nage Class: poorly drained I Observations Confirm Mapped Type? No	
Profile Descrip	• • • •		······································	
Depth	Hz Matrix Color (Munsell Moist) 2.5Y4/2	Texture, Concretions, Structure Loamy sand	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
10-16	2.5Y4/3	Sandy loam	Few	2.5Y5/6
Sulfidic	pipedon Odor loisture Regime lg Conditions or Low-Chroma Colors	Organic St X Listed on L	nic Content in Surface Layer in Sa reaking in Sandy Soils .ocal Hydric Soils List National Hydric Soils List	
WETLAND DE	TERMINATION			

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed

every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well D5 in the agricultural field.

Wetland	WoUS		
Yes	Yes	4	Species Richness
X No	X No	3.30	Prevalence Index

Ρ	aq	е	1

Project Name: PNSC Wetland I	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 41"	
No Is the site a potential Problem Area?	West: 122° 50' 22"	

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	25.00	Yes
2	JUNCUS EFFUSUS	Herb	FACW	10.00	No
3	ALOPECURUS PRATENSIS	Herb	FACW	55.00	Yes
4	POTENTILLA ANSERINA	Herb	OBL	10.00	No

Total Number of Species: 4	Total Dominants: 2	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.90		FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       5<6	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: (Series and Phas	Edmonds fine sandy e): 0 to 2 percent slo		nage Class: poorly drained d Observations				
Taxonomy (Subg	Taxonomy (Subgroup):         mesic, ortstein Andic Duraquods         Confirm Mapped Type?         No						
Profile Description:							
Depth (inches) Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)			
0-8	2.5Y4/2	Loamy sand					
8-16	2.5Y6/2	Loamy sand	Common	7.5YR5/8			
Hydric Soil Indicators:							
WETLAND DETE	RMINATION						

Yes	Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland I is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well E1 in the agricultural field.

Wetland X Yes	WoUS Yes	4	Species Richness
No	X No	1.90	Prevalence Index

### **PNSC Wetland J**

Project Name: PNSC Wetland J	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 39"	
No Is the site a potential Problem Area?	West: 122° 50' 20"	

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	20.00	Yes
2	ALOPECURUS PRATENSIS	Herb	FACW	70.00	Yes
3	POTENTILLA ANSERINA	Herb	OBL	10.00	No
L					

Total Number of Species: 3	Total Dominants: 2	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.90		FAC Neutral: Yes

Recorded Data: Stream, Lake, or Tide Gauge Aerial Photographs	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches
Other X No Recorded Data Available	Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name	Edmonds fine sandy loa	m Ea Draina	age Class: poorly drained	
(Series and Pha	ase): 0 to 2 percent slopes	Field	Observations	
Taxonomy (Sub	ogroup): mesic, ortstein AN	Idic Duraquods Co	onfirm Mapped Type? No	
Profile Descripti	ion:			
Depth (inches) H	Matrix Color Iz (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-10	2.5Y5/2	Loamy sand		
10-16	2.5Y4/2	Loamy sand	Common	7.5YR4/6
Hydric Soil Indi	icators:			
Histosol		Concretions	6	
Histic Ep	pipedon	High Organi	ic Content in Surface Layer in Sa	andy Soils
Sulfidic C	Ddor	X Organic Stre	eaking in Sandy Soils	-
Aquic Mo	pisture Regime	X Listed on Lo	ocal Hydric Soils List	
Reducing	g Conditions	Listed on Na	ational Hydric Soils List	
X Gleyed o	or Low-Chroma Colors	Organic Par	า	
NRCS Field Ind	licators:		Other (Explain i	in Remarks)
WETLAND DET	ERMINATION			
Yes Hydro	ophytic Vegetation Present?	Yes Is this Sample	ing Point Within a Wetland?	

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?		Have the determination results been overridden by the user?

# REMARKS

Wetland J is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland

X Yes No Yes X No

WoUS

3 Species Richness 1.90 Prevalence Index

Project Name: PNSC Wetlands I & J Upland	Date: 06/21/2007	Time:
Sample Point Number: 2	County: Mason Roll No:	State: WA Photo No:
Investigators: GJA & KAB	Roin No.	PHOLO NO.
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 41"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	35.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	15.00	No
3	TRIFOLIUM PRATENSE	Herb	FACU	20.00	Yes
4	FESTUCA ARUNDINACEA	Herb	FAC-	30.00	Yes

Total Number of Specie	es: 4	Total Dom	inants:	3		
Percent of Dominants th	hat are Wetland S	pecies: 50/20	: 33.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.70				FAC Neutral:	No

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

No Hydroph	vtic Vegetation Present?	No Is this	s Sampling Point W	/ithin a Wetland?	
WETLAND DETER					
Hydric Soil Indica Histosol Sulfidic Odd Aquic Moist Reducing C Gleyed or L NRCS Field Indica	edon or ure Regime conditions ow-Chroma Colors	High Org X Liste	ncretions n Organic Content i anic Streaking in S ed on Local Hydric ed on National Hyd anic Pan	Soils List	
10-16	2.5Y6/2	Loamy sand			
Depth (inches) Hz	Matrix Color (Munsell Moist) 2.5Y4/3	Texture, Concretions Structure Loamy sand		Redox Feature undance/Contrast	Redox Color (Munsell Moist)
Profile Description					
(Series and Phase Taxonomy (Subgro	, i i	Duraquods	Field Observatio Confirm Map		
Map Unit Name:	Edmonds fine sandy loam	Ea	Drainage Class:	poorly drained	

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
No	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	Have the determination results been overridden by the user?

### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed	
every year for the past 20+ years.	
	_

Wetland

X No

Yes

WoUS X No

Yes

4 Species Richness 3.70 Prevalence Index

# PNSC Wetlands I & J Upland

Project Name: PNSC Wetlands I & J Upland	Date: 06/21/2007	Time:
Sample Point Number: 3 Investigators: GJA & KAB	County: Mason Roll No:	State: WA Photo No:
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 39"	Datum: NAD83

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	25.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	10.00	No
3	TRIFOLIUM PRATENSE	Herb	FACU	25.00	Yes
4	FESTUCA ARUNDINACEA	Herb	FAC-	30.00	Yes
5	ALOPECURUS PRATENSIS	Herb	FACW	10.00	No
L					

Total Number of Speci	es: 5	Total Domin	ants:	3		
Percent of Dominants	that are Wetland Sp	becies: 50/20:	33.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.50				FAC Neutral:	No

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         X       Other         No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       none       (in.)         Depth to Saturated Soil:       none       (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Nam	e: Edmonds fine sand	y loam Ea	Drainage Class:	poorly drained	
(Series and Ph		-	Field Observations		
Taxonomy (Su		n Andic Duraquods	Confirm Mappe	d Type? No	
Profile Descrip	tion:				
Depth (inches) I	Matrix Color Hz (Munsell Moist)	Texture, Concretions, Structure	-	dox Feature	Redox Color (Munsell Moist)
0-10	2.5Y4/3	Loamy sand			
10-16	2.5Y6/2	Loamy sand			
	P 4				
Hydric Soil Ind		Can	orationa		
Histoso			cretions		
Sulfidic	pipedon Odor	•	n Organic Content in San	•	iay Solis
	loisture Regime		ed on Local Hydric Sc	-	
·	ng Conditions		ed on National Hydric		
	or Low-Chroma Colors		anic Pan		
				Other (Explain in	Romarka)
NRCS Field In	dicators:		_		Remarks)
	TERMINATION				
			Sompling Doint With		

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

#### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years. Recorded hydrology data for this sample point included shallow groundwater monitoring wells E2 and E4 in the agricultural field.

Wetland	WoUS		
Yes	Yes	5	Species Richness
X No	X No	3.50	Prevalence Index

Project Name: PNSC Wetland K	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 41"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	25.00	Yes
2	JUNCUS EFFUSUS	Herb	FACW	15.00	No
3	CAREX OBNUPTA	Herb	OBL	35.00	Yes
4	HOLCUS LANATUS	Herb	FAC	25.00	Yes
			-		

Total Number of Species:	4	Total Dominants	: 3		
Percent of Dominants that	are Wetland Species:	50/20:	100.00	FAC(minus)- applied:	100.00
Prevalence Index:	.90			FAC Neutral:	Yes

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         X       Other         No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: Tidal Marsh		ge Class: very poorly drain	ned
(Series and Phase): Tidal Marsh		Observations	
Taxonomy (Subgroup): mesic hydraquents	Со	nfirm Mapped Type? No	
Profile Description:			
DepthMatrix Color(inches)Hz(Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-10 2.5Y5/2	Loamy sand		
10-16 2.5Y4/2	Loamy sand	Common	7.5YR5/6
Hydric Soil Indicators:			
Histosol	Concretions		
Histic Epipedon	High Organic	c Content in Surface Layer in Sa	andy Soils
Sulfidic Odor	X Organic Stre	aking in Sandy Soils	
Aquic Moisture Regime	X Listed on Lo	cal Hydric Soils List	
Reducing Conditions	Listed on Na	tional Hydric Soils List	
Gleyed or Low-Chroma Colors	Organic Pan		
NRCS Field Indicators:		Other (Explain i	n Remarks)
WETLAND DETERMINATION			
Ves Hydrophytic Vegetation Present?		a Roint Within a Wotland?	

Yes Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
Yes Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes Hydric Soils Present?	NoHave the determination results been overridden by the user?

#### REMARKS

Wetland K is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well E5 in the agricultural field.

Wetland X Yes	WoUS Yes	4	Species Richness
No	XNo	1.90	Prevalence Index

Project Name: PNSC Wetland L	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA & KAB	ROII NO:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 38"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	20.00	Yes
2	JUNCUS EFFUSUS	Herb	FACW	10.00	No
3	POTENTILLA ANSERINA	Herb	OBL	30.00	Yes
4	ALOPECURUS AEQUALIS	Herb	OBL	30.00	Yes
5	ALOPECURUS PRATENSIS	Herb	FACW	10.00	No
			_		
L		1			

Total Number of Species: 5	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.40		FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name	e: Tidal Marsh		age Class: very poorly drain	ned		
(Series and Phase): Tidal Marsh Taxonomy (Subgroup): mesic hydraquents		Field	Field Observations			
		ts Co	onfirm Mapped Type? No			
Profile Descrip	tion:					
Depth (inches)	Matrix Color Hz (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
0-7	2.5Y4/1	Loamy sand				
7-16	2.5Y4/2	Loamy sand	Common	7.5YR5/8		
Hydric Soil Inc	dicators:					
Histosol	l	Concretions				
Histic E			ic Content in Surface Layer in Sa	andy Soils		
Sulfidic			eaking in Sandy Soils			
	loisture Regime		ocal Hydric Soils List			
	ng Conditions		ational Hydric Soils List			
X Gleyed or Low-Chroma Colors		Organic Par	n			
NRCS Field In	dicators:		Other (Explain	in Remarks)		
WETLAND DE	TERMINATION					
Yes Hydr	ophytic Vegetation Present?	Yes Is this Sampl	ing Point Within a Wetland?			

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

#### REMARKS

Wetland L is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	5	Species Richness
No	X No	1.40	Prevalence Index

Project Name: PNSC Wetland M	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 37"	

Dominant Species	Percent Cover	Indicator Status	Strata	Scientific Name	No.
Yes	20.00	FACW	Herb	JUNCUS EFFUSUS	1
Yes	55.00	FACW	Herb	ALOPECURUS PRATENSIS	2
Yes	25.00	OBL	Herb	POTENTILLA ANSERINA	3
			<u> </u>		

Total Number of Species: 3	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.75		FAC Neutral: Yes

Recorded Data: Stream, Lake, or Tide Gauge	Wetland Hydrology Indicators: Primary Indicators:
Aerial Photographs Other X No Recorded Data Available	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations: Depth of Surface Water: (in.) Depth to Free Water in Pit: (in.) Depth to Saturated Soil:10<12 (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name			age Class: very poorly drain	ned		
(Series and Phase): Tidal Marsh			Field Observations			
Taxonomy (Su		ents Co	Confirm Mapped Type? No			
Profile Descrip	tion:					
Depth (inches)	Matrix Color Hz (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
0-10	2.5Y4/3	Loamy sand				
10-17	2.5Y4/2	Loamy sand	Common	7.5YR5/6		
Hydric Soil Inc	dicators:					
Histosol		Concretions	6			
Histic Ep	pipedon	High Organi	ic Content in Surface Layer in Sa	andy Soils		
Sulfidic		• • •	eaking in Sandy Soils	,		
Aquic M	loisture Regime	•	ocal Hydric Soils List			
Reducin	ng Conditions	Listed on Na	ational Hydric Soils List			
X Gleyed	or Low-Chroma Colors	Organic Par	ו			
NRCS Field Indicators:			Other (Explain in Remarks)			
WETLAND DE						
Yes Hydr	ophytic Vegetation Presen	t? Yes Is this Sampli	ing Point Within a Wetland?			

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
_Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

#### REMARKS

Wetland M is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	3	Species Richness
No	X No	1.75	Prevalence Index

Project Name: PNSC Wetland N	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 37"	

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS EFFUSUS	Herb	FACW	20.00	Yes
2	POTENTILLA ANSERINA	Herb	OBL	25.00	Yes
3	ALOPECURUS PRATENSIS	Herb	FACW	55.00	Yes

Total Number of Species: 3	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.75		FAC Neutral: Yes

Recorded Data: Stream, Lake, or Tide Gauge Aerial Photographs	Wetland Hydrology Indicators: Primary Indicators: Inundated
Cther X No Recorded Data Available	X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations: Depth of Surface Water: (in.) Depth to Free Water in Pit: (in.) Depth to Saturated Soil:10<12 (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         X         Water-Stained Leaves         X         Local Soil Survey Data         X         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Nam	ne:	Tidal Marsh		age Class: very poorly drain	ned			
(Series and Pl	hase):	Tidal Marsh	Field Observations					
Taxonomy (Sι	ubgrou	up): mesic hydraquent	s Co	Confirm Mapped Type? No				
Profile Descrip	ption:							
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)			
0-8		2.5Y5/3	Loamy sand					
8-16		2.5Y5/2	Loamy sand	Common	7.5YR4/6			
Libertai a O a il La								
Hydric Soil In Histoso		ors:	Concretions					
Histic E		on		, ic Content in Surface Layer in Sa	andy Soils			
Sulfidic				eaking in Sandy Soils				
		re Regime		ocal Hydric Soils List				
		nditions		ational Hydric Soils List				
	•	w-Chroma Colors	Organic Par	-				
NRCS Field Ir			5	Other (Explain in Remarks)				
WETLAND DE	ETERN	INATION						
Yes Hyd	drophy	tic Vegetation Present?	Yes Is this Sampl	ing Point Within a Wetland?				

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

Wetland N is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	3	Species Richness
No	XNo	1.75	Prevalence Index

Project Name: PNSC Wetland O	Date: 06/21/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA & KAB	KUII NU.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 39"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS EFFUSUS	Herb	FACW	20.00	Yes
2	ALOPECURUS PRATENSIS	Herb	FACW	40.00	Yes
3	POTENTILLA ANSERINA	Herb	OBL	20.00	Yes
4	CAREX OBNUPTA	Herb	OBL	20.00	Yes

Total Number of Species:	4	Total Dominants	6:	4		
Percent of Dominants that are V	Vetland Species:	50/20:	100.00		FAC(minus)- applied:	100.00
Prevalence Index: 1.60					FAC Neutral:	Yes

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         X       Other         No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

d Observations Confirm Mapped Type? No Redox Feature Abundance/Contrast Common	Redox Color (Munsell Moist) / 7.5YR5/6
Redox Feature Abundance/Contrast	(Munsell Moist)
Abundance/Contrast	(Munsell Moist)
Abundance/Contrast	(Munsell Moist)
Common	/ 7.5YR5/6
Common	7.5YR5/6
nic Content in Surface Layer in Sa treaking in Sandy Soils Local Hydric Soils List National Hydric Soils List	andy Soils
Other (Explain i	in Remarks)
а 5	ons anic Content in Surface Layer in Sa Streaking in Sandy Soils Local Hydric Soils List National Hydric Soils List Pan Other (Explain

	Hydrophytic Vegetation Present?	Yes_Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
_Yes_	Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland O is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well E6 in the agricultural field.

Wetland X Yes	WoUS Yes	4	Species Richness
No	XNo	1.60	Prevalence Index

Project Name: PNSC Wetlands K, L, M, N & O Upland	Date: 06/21/2007	Time:
Sample Point Number: 2	County: Mason Roll No:	State: WA
Investigators: GJA & KAB	RUII NU.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 40"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	40.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	15.00	No
3	TRIFOLIUM PRATENSE	Herb	FACU	15.00	No
4	LOLIUM PERENNE	Herb	FACU	30.00	Yes
r I					

Total Number of Species	s: 4	Total Domina	ants:	2		
Percent of Dominants th	at are Wetland Spec	es: 50/20:	0.00		FAC(minus)- applied:	0.00
Prevalence Index:	4.00				FAC Neutral:	No

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         X       Other         No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na (Series and Taxonomy (	Phase)			e Class: very poorly drain servations irm Mapped Type? No	ed
Profile Desc	ription:				
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-8		2.5Y6/3			
8-16		2.5Y6/2			
Sulfic	sol c Epiped dic Odo c Moistu icing Co ed or Lo	don r ure Regime onditions ow-Chroma Colors	Organic Streak	Content in Surface Layer in Sa king in Sandy Soils I Hydric Soils List onal Hydric Soils List Other (Explain in	
WETLAND	DETER	MINATION			
		/tic Vegetation Present? Hydrology Present?		Point Within a Wetland? Point a Waters of the US?	

#### REMARKS

Yes Hydric Soils Present?

This sample point is located in the upla been removed every year for the past 20+ years.	and agricultural field and has been historically hayed and tilled. The vegetation has
Wetland	Wous

Yes X No Yes X No

4 Species Richness 4.00 Prevalence Index

 $\underline{\mbox{No}}$  Have the determination results been overridden by the user?

Project Name: PNSC Wetlands K, L, M, N & O Upland	Date: 06/21/2007	Time:
Sample Point Number: 3 Investigators: GJA & KAB	County: Mason Roll No:	State: WA Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	35.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	15.00	No
3	TRIFOLIUM PRATENSE	Herb	FACU	20.00	Yes
4	LOLIUM PERENNE	Herb	FACU	20.00	Yes
5	AGROSTIS TENUIS	Herb	FAC	10.00	No
L		1			

Total Number of Specie	s: 5	Total Domina	nts:	3		
Percent of Dominants th	at are Wetland Spe	cies: 50/20:	0.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.90				FAC Neutral:	No

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit N	ame:	Tidal Marsh	Tn	Drainage Class:	very poorly drain	ed
(Series and		: Tidal Marsh		Field Observation	าร	
Taxonomy	(Subgro	up): mesic hydraqu	ents	Confirm Map	ped Type? No	
Profile Des	cription:					
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretior Structure		Redox Feature undance/Contrast	Redox Color (Munsell Moist)
0-8		2.5Y6/3	Loamy sand			
8-16		2.5Y6/2	Loamy sand			
Hydric Soil	Indiaata					
Histo		JIS.	C	oncretions		
	c Epipec	lon			n Surface Layer in Sa	ndy Soils
	dic Odor			rganic Streaking in Sa	-	
		ire Regime		sted on Local Hydric	•	
		onditions		sted on National Hyd		
	•	w-Chroma Colors		rganic Pan		
NRCS Field				0	Other (Explain i	n Remarks)
						,
L						
WETLAND	DETER	MINATION				
		<i></i>				

No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

#### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed

every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well E10 in the agricultural field.

Wetla	Ind	WoUS		
	Yes	Yes	5	Species Richness
Х	No	X No	3.90	Prevalence Index

Project Name: PNSC Wetlands K, L, M, N & O Upland	Date: 06/21/2007	Time:
Sample Point Number: 4	County: Mason	State: WA
Investigators: GJA & KAB	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 36"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	20.00	Yes
3	TRIFOLIUM PRATENSE	Herb	FACU	20.00	Yes
4	LOLIUM PERENNE	Herb	FACU	15.00	No
5	AGROSTIS TENUIS	Herb	FAC	15.00	No

Total Number of Specie	es:	5	Total Domina	nts:	3		
Percent of Dominants t	hat are V	Vetland Species:	50/20:	0.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.85					FAC Neutral:	No

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        XOther        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit N	ame:	Tidal Marsh	Tn Draina	ge Class: very poorly drain	ned		
(Series and Phase): Tidal Marsh			Field Observations				
Taxonomy (Subgroup): mesic hydraquents			Confirm Mapped Type? No				
Profile Desc							
Depth		Matrix Color	Texture, Concretions,	Redox Feature	Redox Color		
(inches)	Hz	(Munsell Moist)	Structure	Abundance/Contrast	(Munsell Moist)		
0-8		2.5Y5/3	Loamy sand				
8-16		2.5Y6/2	Loamy sand				
Hydric Soil	Indicate	ors:					
Histo	sol		Concretions				
	c Epipeo		0 0	c Content in Surface Layer in Sa	indy Soils		
	dic Odo		•	Organic Streaking in Sandy Soils			
		ure Regime		X Listed on Local Hydric Soils List			
	•	onditions		Listed on National Hydric Soils List			
		ow-Chroma Colors	Organic Pan	Organic Pan			
NRCS Field Indicators:				Other (Explain i	n Remarks)		
	DETER						
WETLAND	DETER						
1	بما مرجع المري	dia Magatatian Dragonto					

No	Hydrophytic Vegetation Present?	No Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed

every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well E11 in the agricultural field.

Wetland	WoUS		
Yes	Yes	5	Species Richness
X No	X No	3.85	Prevalence Index

Project Name: PNSC Wetland P	Date: 06/22/2007	Time:
Sample Point Number: 1 Investigators: GJA	County: Mason Roll No:	State: WA Photo No:
Investigators. GJA	Ron No.	FIIOLO NO.
	• • •	
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)? Is the site a potential Problem Area?	Lat./Long.: North: 47° 26' 38" West: 122° 50' 33"	Datum: NAD83

Yes           No           Yes           Yes           Yes           Yes
) Yes
) Vee
J Tes

Total Number of Species: 4	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.80		FAC Neutral: Yes

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         Other         X       No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       8<10	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na (Series and	Phase)		F	Prainage Class: ield Observations		ned
Taxonomy (		., .	ents	Confirm Mappe	d Type? No	
Profile Desc Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure		edox Feature dance/Contrast	Redox Color (Munsell Moist)
0-10		2.5Y6/2	Loamy sand		dance/contrast	
10-16		2.5Y5/2	Loamy sand		Common	7.5YR5/6
Hydric Soil Indicators:         Histosol         Histic Epipedon         Sulfidic Odor         Aquic Moisture Regime         Reducing Conditions         X         Gleyed or Low-Chroma Colors         NRCS Field Indicators:		X Organio X Listed o	rganic Content in Streaking in San on Local Hydric So on National Hydric	oils List		
WETLAND						
1		tic Vegetation Present?	? Yes le this S	ampling Point With	nin a Wetland?	

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	Have the determination results been overridden by the user?

#### REMARKS

Wetland P is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	4	Species Richness
No	XNo	1.80	Prevalence Index

Project Name: PNSC Wetland Q	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat /Lang :	Datum: NAD83
Tes_ Do Normal Circumstances exist on the site?	Lat./Long.:	Datum. NADos
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 36"	Datum. NADos

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	20.00	Yes
2	JUNCUS EFFUSUS	Herb	FACW	10.00	No
3	POTENTILLA ANSERINA	Herb	OBL	20.00	Yes
4	ALOPECURUS AEQUALIS	Herb	OBL	35.00	Yes
5	ALOPECURUS PRATENSIS	Herb	FACW	15.00	No

Total Number of Species: 5	Total Dominants: 3		
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied:	100.00
Prevalence Index: 1.45		FAC Neutral:	Yes

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

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#### SOILS

Map Unit N (Series and	Phase): Tidal Marsh	Tn Drainage Class: very poorly drained Field Observations			
-	(Subgroup): mesic hyd	aquents Confirm	Confirm Mapped Type? No		
Profile Desc Depth (inches)	Hz (Munsell Moist	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)	
0-8 8-16	2.5Y6/2 2.5Y4/2	Loamy sand Loamy sand	Common	7.5YR5/8	
Hydric Soil Indicators:       Concretions         Histosol       Histic Epipedon         Sulfidic Odor       High Organic Content in Surface Layer in Sandy Soils         Aquic Moisture Regime       X         Reducing Conditions       Listed on Local Hydric Soils List         X       Gleyed or Low-Chroma Colors					
NRCS Field	I Indicators:		Other (Explain i	n Remarks)	
WETLAND	DETERMINATION				
[ <b></b>	DETERMINATION				

Ye	B Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
	s Wetland Hydrology Present?	No_Is this Sampling Point a Waters of the US?
_Ye	s_ Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland Q is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

This wetland is a mosiac of wetlands all located within 100 feet of each other.

Recorded hydrology data for this sample point included shallow groundwater monitoring wells E8 and E9 in the agricultural field.

Wetland	WoUS		
X Yes	Yes	5	Species Richness
No	X No	1.45	Prevalence Index

Project Name: PNSC Wetland R	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 35"	
is the site significantly disturbed (Atypical Situation):		

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	20.00	Yes
2	JUNCUS EFFUSUS	Herb	FACW	10.00	No
3	POTENTILLA ANSERINA	Herb	OBL	20.00	Yes
4	ALOPECURUS PRATENSIS	Herb	FACW	50.00	Yes

Total Number of Species: 4	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.80		FAC Neutral: Yes

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         Other         X       No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name:       Tidal Marsh       Tn       Drainage Class:       very poorly drained         (Series and Phase):       Tidal Marsh       Field Observations         Taxonomy (Subgroup):       mesic hydraquents       Confirm Mapped Type?       No						ned		
-		up): mesic hydraqu	ents	Confirm Mappe	ed Type? No			
Profile Desc	cription:					Redox Color		
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions Structure					
0-10		2.5Y6/2	Loamy sand					
10-16		2.5Y5/2	Loamy sand		Common	7.5YR6/8		
Hydric Soil Histo		ors:	Cor	ocretions				
	soi c Epipe	don		h Organic Content in	Surface Lover in Sc	andy Soils		
	dic Odo		•	•	•			
· · · · · · · · · · · · · · · · · · ·		, ure Regime						
		onditions		Listed on National Hydric Soils List				
	•	ow-Chroma Colors		Organic Pan				
NRCS Field Indicators:				Other (Explain in Remarks)				
WETLAND	DETER	MINATION						
Yes H	vdrophy	tic Vegetation Present	? Yes is thi	s Sampling Point Wit	thin a Wetland?			

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	Have the determination results been overridden by the user?

#### REMARKS

Wetland R is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	4	Species Richness
No	XNo	1.80	Prevalence Index

Project Name: PNSC Wetlands P, Q & R Upland	Date: 06/22/2007	Time:
Sample Point Number: 2	County: Mason Roll No:	State: WA
Investigators: GJA	NUI NO.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 37"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	LOLIUM PERENNE	Herb	FACU	20.00	Yes
2	ANTHOXANTHUM ODORATUM	Herb	FACU	35.00	Yes
3	CREPIS CAPILLARIS	Herb	FACU	10.00	No
4	TRIFOLIUM PRATENSE	Herb	FACU	20.00	Yes
5	HOLCUS LANATUS	Herb	FAC	15.00	No

Total Number of Species	: 5	Total Dominants:		3		
Percent of Dominants that	at are Wetland Specie	s: 50/20: 0	.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.85				FAC Neutral:	No

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        XOther        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       (in.)	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na (Series and Taxonomy ( Profile Desc	Phase): Subgrou			Tn Drainage Class: very poorly drained Field Observations Confirm Mapped Type? No				
Depth (inches) 0-12 12-16	Hz	Matrix Color (Munsell Moist) 2.5Y6/3 2.5Y5/2	Texture, Conc Structur Loamy sa Loamy sa	nd	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
Hydric Soil Indicators:								
No H		Tination tic Vegetation Present?	No	Is this Sampling	Point Within a Wetland?			
No Wetland Hydrology Present?			No					

Yes Hydric Soils Present?

REMARKS			
This sample point is loca been removed every year for the past 2	ated in the upland agricultural field and has	been historically hayed a	nd tilled. The vegetation has
Wetland	WoUS	_	
Yes	Yes	5	Species Richness

Х No

Yes X No

**Species Richness** 5 3.85 Prevalence Index

No\_\_\_\_Have the determination results been overridden by the user?

Project Name: PNSC Wetlands P, Q & R Upland	Date: 06/22/2007	Time:
Sample Point Number: 3	County: Mason Roll No:	State: WA Photo No:
Investigators: GJA	Roin No.	Photo No.
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 39"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	LOLIUM PERENNE	Herb	FACU	15.00	No
2	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	Yes
3	CREPIS CAPILLARIS	Herb	FACU	15.00	No
4	TRIFOLIUM PRATENSE	Herb	FACU	20.00	Yes
5	HOLCUS LANATUS	Herb	FAC	20.00	Yes
L					

Total Number of Spec	ies: 5	Tota	I Dominants	s:	3		
Percent of Dominants	that are Wetland Sp	ecies:	50/20:	33.00		FAC(minus)- applied:	33.00
Prevalence Index:	3.80					FAC Neutral:	No

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit N (Series and Taxonomy	Phase) (Subgro		Field	nage Class: very poorly drai d Observations Confirm Mapped Type? No	ned
Profile Desc Depth (inches) 0-12	Hz	Matrix Color (Munsell Moist) 2.5Y5/3	Texture, Concretions, Structure Loamy sand	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
		2.5Y5/2	Loamy sand	Few	2.5Y5/6
Sulfie Aqui Redu	osol c Epipeo dic Odo c Moistu ucing Co ed or Lo	don r ure Regime onditions ow-Chroma Colors	Organic S X Listed on I	nic Content in Surface Layer in Sa treaking in Sandy Soils Local Hydric Soils List National Hydric Soils List	
WETLAND	DETER	MINATION			
No H	ydrophy	tic Vegetation Present?	No Is this Sam	pling Point Within a Wetland?	

# No Hydrophytic Vegetation Present? No Is this Sampling Point Within a Wetland? No Wetland Hydrology Present? No Is this Sampling Point a Waters of the US? Yes Hydric Soils Present? No Have the determination results been overridden by the user?

#### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years. Recorded hydrology data for this sample point included shallow groundwater monitoring well E7 in the agricultural field.

Wetland	WoUS		
Yes	Yes	5	Species Richness
X No	X No	3.80	Prevalence Index

#### **PNSC Wetland S-1**

Ρ	age	1

Project Name: PNSC Wetland S-1	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 33"	
No Is the site a potential Problem Area?	West: 122° 50' 32"	

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ALOPECURUS PRATENSIS	Herb	FACW	30.00	Yes
2	SCIRPUS ACUTUS	Herb	OBL	40.00	Yes
3	TYPHA LATIFOLIA	Herb	OBL	30.00	Yes

Total Number of Species: 3	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.30		FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: <u>X</u> Inundated <u>X</u> Saturated in Upper 12 inches <u>X</u> Water Marks Drift Lines
Field Observations:3<4(in.)Depth of Surface Water:3<4	Sediment Deposits         X       Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         X       Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na (Series and Taxonomy (	Phase)			n Drainage Field Obs		oorly drained	ł
Profile Desc		up). mesic nyulaq		Comm		INO	
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concr Structure		Redox Featu Abundance/Cor	-	Redox Color (Munsell Moist)
0-16		10YR2-2.5/1	Silt				
X Sulfic	sol Epiped dic Odo C Moistu icing Co ed or Lo	don r ure Regime onditions ow-Chroma Colors	X	Organic Streaki	ontent in Surface La ng in Sandy Soils Hydric Soils List nal Hydric Soils List Other	-	
WETLAND	DETER	MINATION					
Yes H	ydrophy	tic Vegetation Prese	ent? Yes	Is this Sampling	Point Within a Wetla	and?	

	<u>res</u> is this sampling Point within a wetland?
Yes Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

This wetland is located in the drainage ditch draining the agricultural fields.

 Wetland
 WoUS

 X
 Yes
 Yes

 No
 X
 No

 X
 No

 1.30
 Prevalence Index

Page	1

Project Name: PNSC Wetland S-2	Date: 06/21/2007	Time:
Sample Point Number: 1 Investigators: GJA & KAB	County: Mason Roll No:	State: WA Photo No:
Investigators. GJA & KAB	Non No.	Photo No.
Ver De Newsel Observerstein and exist and the site O	/	
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 78"	Datum: NAD83

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ALOPECURUS PRATENSIS	Herb	FACW	60.00	Yes
2	HOLCUS LANATUS	Herb	FAC	20.00	Yes
3	PHLEUM PRATENSE	Herb	FAC-	20.00	Yes

Total Number of Species:	3	Total Dominants	s: 3	3		
Percent of Dominants that are	Wetland Species:	50/20:	100.00		FAC(minus)- applied:	67.00
Prevalence Index: 2.40	)				FAC Neutral:	Yes

Recorded Data:          Stream, Lake, or Tide Gauge          Aerial Photographs          Other          No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines		
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)		

Map Unit Name	-		nage Class: poorly drained	
(Series and Pha	, , ,		Observations	
Taxonomy (Sub	• • • •	ndic Duraquads C	Confirm Mapped Type? No	
Profile Descript				
Depth (inches) H	Matrix Color Iz (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)
0-12	2.5Y4/1	Loamy sand		
12-16	2.5Y5/2	Loamy sand	Common	7.5YR5/6
	•			
Reducing	vipedon	Organic St X Listed on L	nic Content in Surface Layer in Sa reaking in Sandy Soils .ocal Hydric Soils List lational Hydric Soils List an	
NRCS Field Ind			Other (Explain	in Remarks)

	Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No_Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No Have the determination results been overridden by the user?

### REMARKS

Wetland S-2 is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed

every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well D1 in the agricultural field.

Wetland WoUS		
X Yes	Yes	3 Species Richness
No	X No	2.40 Prevalence Index

Project Name: PNSC Wetland T	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA
Investigators: GJA	Roll No.	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 33"	Datum: NAD83

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	POTENTILLA ANSERINA	Herb	OBL	45.00	Yes
2	JUNCUS EFFUSUS	Herb	FACW	20.00	No
3	ALOPECURUS PRATENSIS	Herb	FACW	5.00	No
4	JUNCUS BALTICUS	Herb	FACW+	15.00	No
5	ALOPECURUS AEQUALIS	Herb	OBL	30.00	Yes
L	·				

Total Number of Species: 5	Total Dominants: 2		
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied:	100.00
Prevalence Index: 1.35		FAC Neutral:	Yes

Recorded Data:        Stream, Lake, or Tide Gauge        Aerial Photographs        Other        No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Nan	ne: Tidal Marsh	Tn Drainag	ge Class: very poorly drai	ned		
(Series and P	hase): Tidal Marsh	Field O	Field Observations Confirm Mapped Type? No			
Taxonomy (S	ubgroup): mesic hydra	quents Con				
Profile Descri	ption:					
Depth (inches)	Hz Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
0-8	2.5Y5/2	Loamy sand				
8-16	2.5Y6/2	Loamy sand	Common	7.5YR5/8		
Hydric Soil Ir Histoso		Concretions				
Histic E	Epipedon	High Organic	Content in Surface Layer in Sa	andy Soils		
Sulfidio		•	aking in Sandy Soils			
	Moisture Regime		al Hydric Soils List			
Reduc	ing Conditions	Listed on Nat	ional Hydric Soils List			
X_Gleyed	d or Low-Chroma Colors	Organic Pan				
NRCS Field I	ndicators:		Other (Explain	in Remarks)		
WETLAND D	ETERMINATION					
		opt?				

	Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland T is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well F1 in the agricultural field.

Wetland X Yes	WoUS Yes	5	Species Richness
No	X No	1.35	Prevalence Index

Project Name: PNSC Wetland U	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 32"	
No Is the site a potential Problem Area?	West: 122° 50' 22"	

### VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	POTENTILLA ANSERINA	Herb	OBL	40.00	Yes
2	ALOPECURUS PRATENSIS	Herb	FACW	20.00	Yes
3	JUNCUS BALTICUS	Herb	FACW+	30.00	Yes
4	CAREX OBNUPTA	Herb	OBL	10.00	No

Total Number of Species: 4	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.50		FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na (Series and		Tidal Marsh ): Tidal Marsh		age Class: very poorly drain Observations	ned	
Taxonomy (				Confirm Mapped Type? No		
Profile Desc						
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)	
0-8		2.5Y4/1	Loamy sand	Common	7.5YR5/8	
8-16		2.5Y6/1	Loamy sand	Common	7.5YR6/8	
Hydric Soil Histo			Concretions	c Content in Surface Layer in Sa	andy Soils	
	dic Odo		0	aking in Sandy Soils	andy Solis	
		ure Regime onditions		cal Hydric Soils List ational Hydric Soils List		
	•	ow-Chroma Colors	Organic Pan	-		
NRCS Field Indicators:				Other (Explain	in Remarks)	
WETLAND I	DETER	MINATION				
V.a. Lb	vdroph	utic Vagatation Procent?				

	Hydrophytic Vegetation Present?	Yes Is this Sampling Point Within a Wetland?
	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland U is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well F2 in the agricultural field.

Wetland X Yes	WoUS Yes	4	Species Richness
No	X No	1.50	Prevalence Index

Project Name: PNSC Wetland V	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason Roll No:	State: WA Photo No:
Investigators: GJA	Roll No.	Photo No.
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 31"	Datum: NAD83

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	POTENTILLA ANSERINA	Herb	OBL	40.00	Yes
2	CAREX OBNUPTA	Herb	OBL	20.00	Yes
3	JUNCUS BALTICUS	Herb	FACW+	20.00	Yes
4	ALOPECURUS PRATENSIS	Herb	FACW	20.00	Yes

Total Number of Species:	4	Total Dominan	ts: 4		
Percent of Dominants that	t are Wetland Species:	50/20:	100.00	FAC(minus)- applied:	100.00
Prevalence Index:	1.40			FAC Neutral:	Yes

Recorded Data:         Stream, Lake, or Tide Gauge         Aerial Photographs         Other         X       No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: Tidal Marsh		age Class: very poorly drain	ned		
(Series and Phase): Tidal Marsh	Field	Field Observations			
Taxonomy (Subgroup): mesic hydraque	nts Co	Confirm Mapped Type? No			
Profile Description:					
DepthMatrix Color(inches)Hz(Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
0-8 2.5Y4/2	Loamy sand				
8-16 2.5Y6/2	Loamy sand	Common	7.5YR5/8		
Hydric Soil Indicators:					
Histosol	Concretions				
Histic Epipedon		ic Content in Surface Layer in Sa	andy Soils		
Sulfidic Odor	ū	eaking in Sandy Soils			
Aquic Moisture Regime		ocal Hydric Soils List			
Reducing Conditions		ational Hydric Soils List			
X_Gleyed or Low-Chroma Colors	Organic Par				
NRCS Field Indicators:		Other (Explain	in Remarks)		
WETLAND DETERMINATION					
Yes Hydrophytic Vegetation Present?	Yes Is this Sampl	ing Point Within a Wetland?			

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

### REMARKS

Wetland V is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	4	Species Richness
No	XNo	1.40	Prevalence Index

Project Name: PNSC Wetlands T, U & V Upland	Date: 06/22/2007 County: Mason	Time: State: WA
Sample Point Number: 2 Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 31"	

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	35.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	20.00	Yes
3	TRIFOLIUM PRATENSE	Herb	FACU	15.00	No
4	FESTUCA ARUNDINACEA	Herb	FAC-	10.00	No

Total Number of Species	s: 4	Total Domir	ants:	2		
Percent of Dominants th	at are Wetland Sp	ecies: 50/20:	0.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.88				FAC Neutral:	No

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: Tidal marsh (Series and Phase): Tidal marsh Taxonomy (Subgroup): mesic hydraquents Profile Description:				Tn Drainage Class: very poorly drained Field Observations Confirm Mapped Type? No				
Depth (inches) 0-10 10-16	Hz	Matrix Color (Munsell Moist) 10YR4/3 2.5Y6/2	Texture, Conc Structur Loamy sa Loamy sa	nd	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
Aquin Aquin Redu Gley NRCS Field	osol c Epipec dic Odor c Moistu ucing Cc ed or Lc I Indicat	don r ure Regime onditions ow-Chroma Colors ors: 	X	Organic Streak	Content in Surface Layer in Sa ting in Sandy Soils I Hydric Soils List nal Hydric Soils List Other (Explain i			
WETLAND		VINATION /tic Vegetation Present?	No	Is this Sampling	Point Within a Wetland?			
		Hydrology Present?	No		Point a Waters of the US?			

#### REMARKS

Yes Hydric Soils Present?

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland

Х

Yes

No

WoUS Yes X No

4 Species Richness 3.88 Prevalence Index

No\_\_\_\_Have the determination results been overridden by the user?

### PNSC Wetlands T, U & V Upland

Project Name: PNSC Wetlands T, U & V Upland	Date: 06/22/2007	Time:
Sample Point Number: 3	County: Mason Roll No:	State: WA
Investigators: GJA	Roll 198:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 30"	Datum: NAD83

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	35.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	25.00	Yes
3	TRIFOLIUM PRATENSE	Herb	FACU	25.00	Yes
4	FESTUCA ARUNDINACEA	Herb	FAC-	15.00	No

Total Number of Speci	es: 4	Total Dominan	ts:	3		
Percent of Dominants	that are Wetland Specie	es: 50/20:	0.00		FAC(minus)- applied:	0.00
Prevalence Index:	3.85				FAC Neutral:	No

Recorded Data:            Stream, Lake, or Tide Gauge            Aerial Photographs         X       Other          No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: Tidal Marsh (Series and Phase): Tidal Marsh Taxonomy (Subgroup): mesic hydraquents			Field	Tn Drainage Class: very poorly drained Field Observations Confirm Mapped Type? No			
Profile Desc	ription:						
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
0-12		2.5Y5/3	Loamy sand				
12-16		2.5Y6/3	Loamy sand				
Sulfid	sol Epipec lic Odor Moistu cing Cc ed or Lo	lon ire Regime onditions w-Chroma Colors	Organic St	nic Content in Surface Layer in Sa reaking in Sandy Soils Local Hydric Soils List National Hydric Soils List			
	DETERI						

No	Hydrophytic Vegetation Present? Wetland Hydrology Present?	No No	Is this Sampling Point Within a Wetland? Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

#### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed

every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well F3 in the agricultural field.

Wetland	WoUS		
Yes	Yes	4 Species Richne	ess
X No	X No	3.85 Prevalence Inc	lex

Project Name: PNSC Wetland W	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes Do Normal Circumstances exist on the site? No Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 35"	Datum: NAD83

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	40.00	Yes
2	ALOPECURUS PRATENSIS	Herb	FACW	40.00	Yes
3	POTENTILLA ANSERINA	Herb	OBL	20.00	Yes

Total Number of Species: 3	Total Dominants: 3	
Percent of Dominants that are Wetland Species:	50/20: 100.00	FAC(minus)- applied: 100.00
Prevalence Index: 1.80		FAC Neutral: Yes

Recorded Data:          Stream, Lake, or Tide Gauge          Aerial Photographs          Other          No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: Tidal Marsh (Series and Phase): Tidal Marsh Taxonomy (Subgroup): mesic hydraquents			Tn Drainage Class: very poorly drained Field Observations					
				Confirm Mapped Type? No				
Profile Desc		• •						
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)			
0-8		2.5Y5/2	Loamy sand		/			
8-16		2.5Y6/2	Loamy sand	Common	7.5YR5/8			
Hydric Soil Histo		ors:	Concretions					
Histic	c Epipe	don	0	c Content in Surface Layer in Sa	andy Soils			
	dic Odo			eaking in Sandy Soils				
		ure Regime						
	•	onditions		Listed on National Hydric Soils List				
<u>X</u> Gley	ed or Lo	ow-Chroma Colors	Organic Pan					
NRCS Field	I Indicat	tors:		Other (Explain	in Remarks)			
NETLAND	DETER	MINATION						
	بما سم سم ام ب	tia Vagatatian Bragant?						

	Hydrophytic Vegetation Present?	Yes_Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No Is this Sampling Point a Waters of the US?
_Yes_	Hydric Soils Present?	No Have the determination results been overridden by the user?

#### REMARKS

Wetland W is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Recorded hydrology data for this sample point included shallow groundwater monitoring well F4 in the agricultural field.

Wetland X Yes	WoUS Yes	3	Species Richness
No	X No	1.80	Prevalence Index

Project Name: PNSC Wetland X	Date: 06/22/2007	Time:
Sample Point Number: 1	County: Mason	State: WA
Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 34"	
No Is the site a potential Problem Area?	West: 122° 50' 29"	

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	JUNCUS BALTICUS	Herb	FACW+	20.00	Yes
2	ALOPECURUS PRATENSIS	Herb	FACW	15.00	No
3	POTENTILLA ANSERINA	Herb	OBL	20.00	Yes
4	ALOPECURUS AEQUALIS	Herb	OBL	45.00	Yes
-					

Total Number of Species:	4	Total Dominan	its:	3	
Percent of Dominants tha	t are Wetland Species:	50/20:	100.00		FAC(minus)- applied: 100.00
Prevalence Index:	1.35				FAC Neutral: Yes

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:       (in.)         Depth of Surface Water:       (in.)         Depth to Free Water in Pit:       (in.)         Depth to Saturated Soil:       10<12	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         X       Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         X       FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Na	ame:	Tidal Marsh	Tn Drain	age Class: very poorly drain	ned			
(Series and Phase): Tidal Marsh Taxonomy (Subgroup): mesic hydraquents			Field	Field Observations				
			s C	onfirm Mapped Type? No				
Profile Desc	ription:							
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)			
0-8		2.5Y5/2	Loamy sand		/			
8-16		2.5Y6/1	Loamy sand	Common	5YR5/8			
Hydric Soil	Indicat	ors:						
Histo			Concretions	8				
Histic	Epipe	don	High Organ	ic Content in Surface Layer in Sa	andy Soils			
	dic Odo		* *	eaking in Sandy Soils	,			
Aquic	c Moistu	ure Regime						
		onditions	Listed on N	Listed on National Hydric Soils List				
X Gleye	ed or Lo	ow-Chroma Colors	Organic Pa	n				
NRCS Field	Indicat	ors:		Other (Explain	in Remarks)			
WETLAND D	DETER	MINATION						
Yes Hy	ydrophy	tic Vegetation Present?	Yes Is this Samp	ing Point Within a Wetland?				

Yes	Hydrophytic Vegetation Present?	Yes	Is this Sampling Point Within a Wetland?
Yes	Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?
Yes	Hydric Soils Present?	No	_Have the determination results been overridden by the user?

#### REMARKS

Wetland X is located in the agricultural field and has been historically hayed and tilled. The vegetation has been removed every year for the past 20+ years.

Wetland X Yes	WoUS Yes	4	Species Richness
No	X No	1.35	Prevalence Index

### PNSC Wetlands W & X Upland

Project Name: PNSC Wetlands W & X Upland	Date: 06/22/2007	Time:	
Sample Point Number: 2 Investigators: GJA	County: Mason State: W/ Roll No: Photo No:		
Investigators. GJA	rton rto.		
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83	
No Is the site significantly disturbed (Atypical Situation)?	North: 47° 26' 33"		
No Is the site a potential Problem Area?	West: 122° 50' 28"		

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	30.00	No
2	CREPIS CAPILLARIS	Herb	FACU	20.00	No
3	FESTUCA ARUNDINACEA	Herb	FAC-	40.00	No
4	LOLIUM PERENNE	Herb	FACU	10.00	No

Total Number of Species:	0	Total Dominar	nts:	0		
Percent of Dominants that	t are Wetland Species:	50/20:	0.00		FAC(minus)- applied:	0.00
Prevalence Index:	0.00				FAC Neutral:	

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: Tidal marsh (Series and Phase): Tidal marsh Taxonomy (Subgroup): mesic hydraquents			Tn Drainage Class: very poorly drained Field Observations Confirm Mapped Type? No				
Profile Desc	-						
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)		
0-10		2.5Y6/3 2.5Y5/3	Loamy sand Loamy sand				
Hydric Soil	Indicate	Drs:					
Histo Histo Sulfic Aquio Redu	sol Epipeo dic Odor Moistu cing Co	don	Organic Stre X Listed on Lo	c Content in Surface Layer in Sa eaking in Sandy Soils ocal Hydric Soils List ational Hydric Soils List	andy Soils		
NRCS Field Indicators:		ors:		Other (Explain	in Remarks)		
WETLAND	DETERI	MINATION					
No W	etland l	rtic Vegetation Present? Hydrology Present? bils Present?	No Is this Sampli	ing Point Within a Wetland? ing Point a Waters of the US? ermination results been overridd	on by the user?		

#### REMARKS

This sample point is loo been removed every year for the past	cated in the upland agricultural field and has b 20+ years.	been historically hayed ar	d tilled. The vegetation has
Wetland Yes	WoUS Yes	0	Species Richness

Yes X No

0 Species Richness 0.00 Prevalence Index

No\_\_\_\_Have the determination results been overridden by the user?

### PNSC Wetlands W & X Upland

Project Name: PNSC Wetlands W & X Upland	Date: 06/22/2007	Time:
Sample Point Number: 4	County: Mason	State: WA
Investigators: GJA	Roll No:	Photo No:
Yes Do Normal Circumstances exist on the site?	Lat./Long.:	Datum: NAD83
Yes         Do Normal Circumstances exist on the site?           No         Is the site significantly disturbed (Atypical Situation)?	Lat./Long.: North: 47° 26' 31"	Datum: NAD83

# VEGETATION

No.	Scientific Name	Strata	Indicator Status	Percent Cover	Dominant Species
1	ANTHOXANTHUM ODORATUM	Herb	FACU	20.00	Yes
2	CREPIS CAPILLARIS	Herb	FACU	15.00	No
3	FESTUCA ARUNDINACEA	Herb	FAC-	20.00	Yes
4	LOLIUM PERENNE	Herb	FACU	10.00	No
5	AGROSTIS TENUIS	Herb	FAC	35.00	Yes

Total Number of Species:	5	Total Dominant	ts:	3		
Percent of Dominants that are V	Vetland Species:	50/20:	67.00		FAC(minus)- applied:	33.00
Prevalence Index: 3.45					FAC Neutral:	No

Recorded Data:	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:	Sediment Deposits         Drainage Patterns in Wetlands         Secondary Indicators (2 or more required):         Oxidized Root Channels in Upper 12 inches         Water-Stained Leaves         X       Local Soil Survey Data         FAC-Neutral Test         Other (Explain in Remarks)

Map Unit Name: Tidal Marsh Tn Drainage Class: very poorly drained								
(Series and	,			Field Observations Confirm Mapped Type? No				
Taxonomy	(Subgro	up): mesic hydraquents	0					
Profile Desc	cription:							
Depth (inches)	Hz	Matrix Color (Munsell Moist)	Texture, Concretions, Structure	Redox Feature Abundance/Contrast	Redox Color (Munsell Moist)			
0-10		2.5Y6/3	Loamy sand					
10-16		2.5Y5/2	Loamy sand					
Hydric Soil		ors:						
Histo				Concretions				
	c Epipe		* *	High Organic Content in Surface Layer in Sandy Soils				
	dic Odo			Organic Streaking in Sandy Soils				
·		ure Regime		X Listed on Local Hydric Soils List				
		onditions		Listed on National Hydric Soils List				
		ow-Chroma Colors		Organic Pan				
NRCS Field	I Indicat	ors:		Other (Explain	in Remarks)			
L								
WETLAND DETERMINATION								

	No	Hydrophytic Vegetation Present?	No	Is this Sampling Point Within a Wetland?	
		Wetland Hydrology Present?	No	Is this Sampling Point a Waters of the US?	
-	Yes	Hydric Soils Present?	NoHave the determination results been overridden by the user?		

#### REMARKS

This sample point is located in the upland agricultural field and has been historically hayed and tilled. The vegetation has been removed

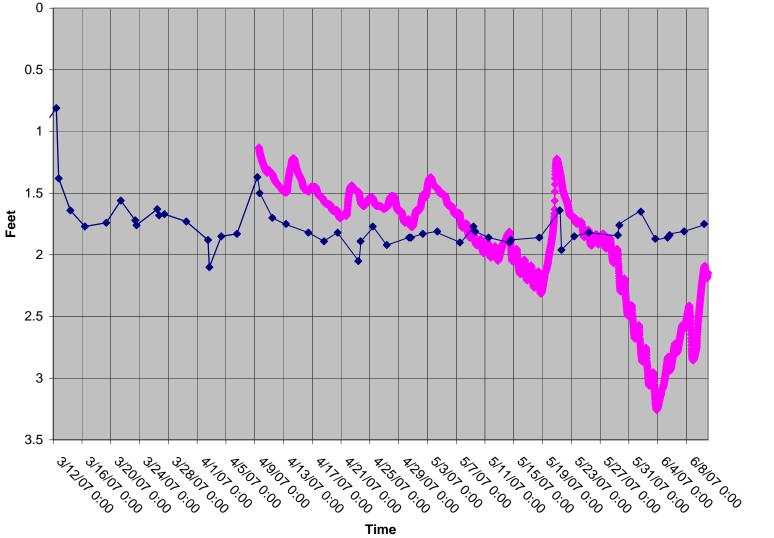
every year for the past 20+ years.

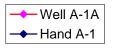
Recorded hydrology data for this sample point included shallow groundwater monitoring wells F5 and F6 in the agricultural field.

Wetland	WoUS		
Yes	Yes	5	Species Richness
X No	X No	3.45	Prevalence Index



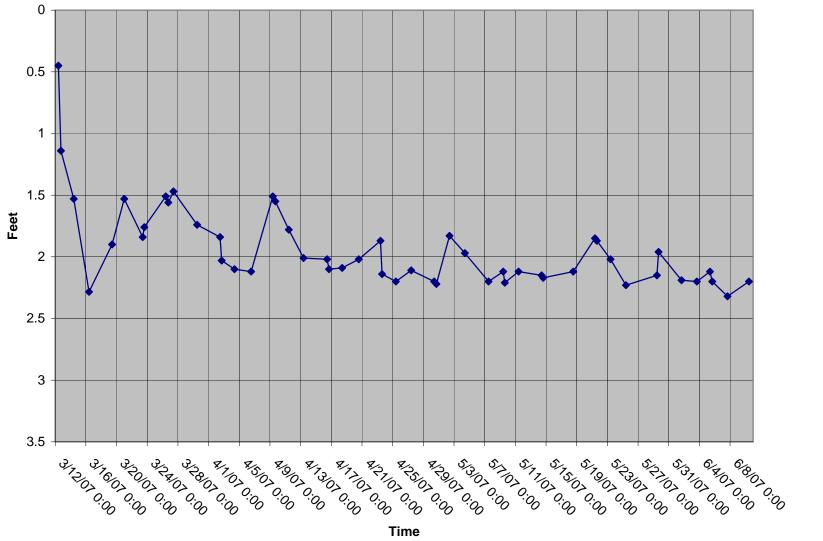
APPENDIX D SHALLOW GROUNDWATER WELL MONITORING DATA





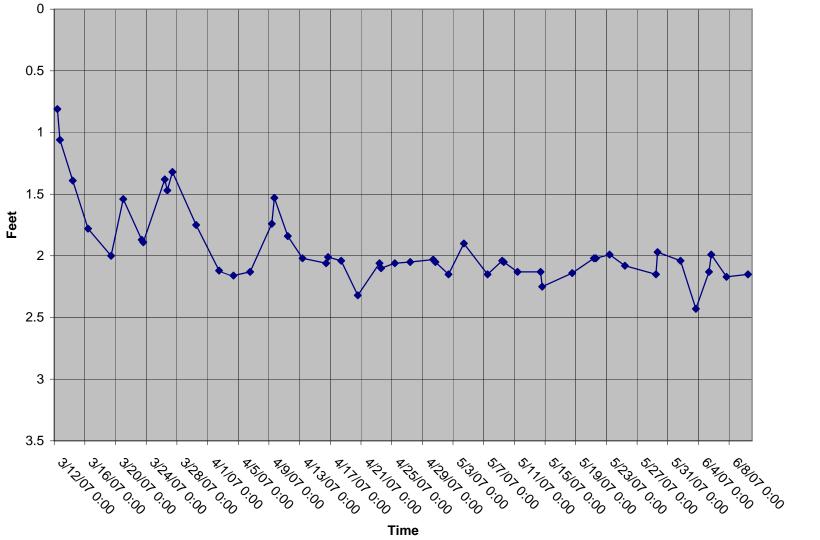
A-1

Time



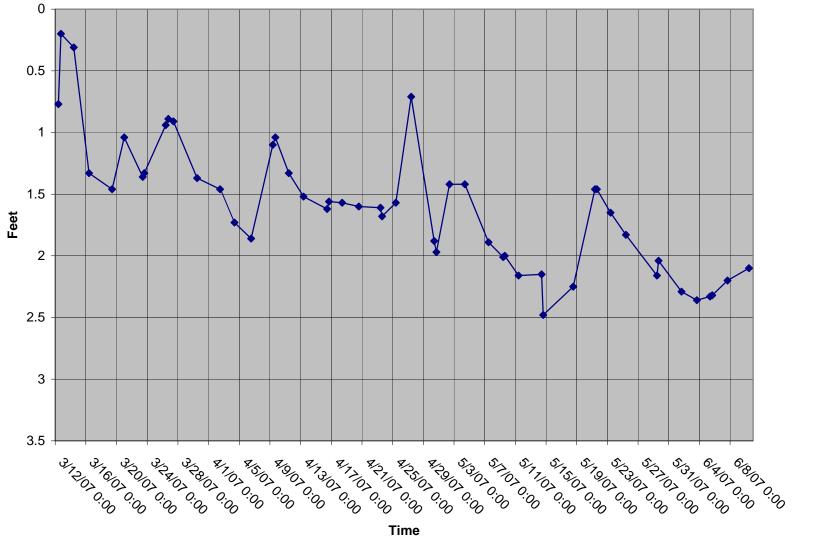
**→** A2

A-2



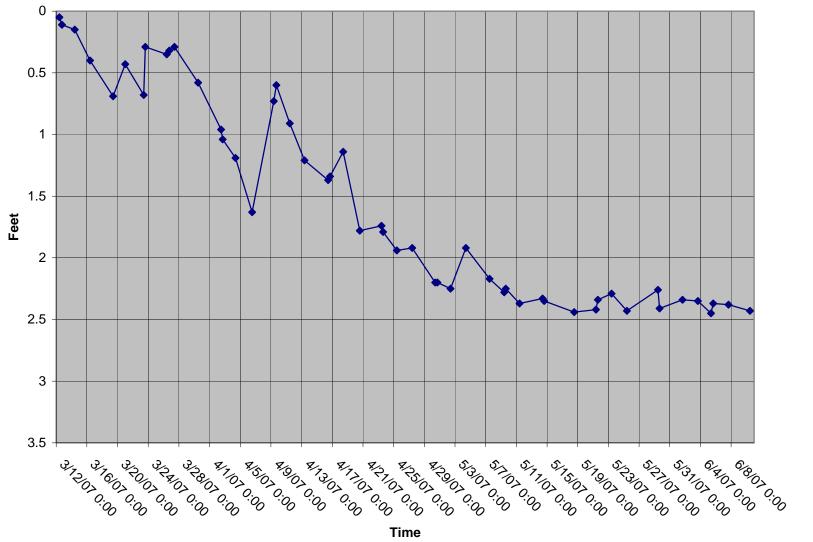
A-3

**→** A3



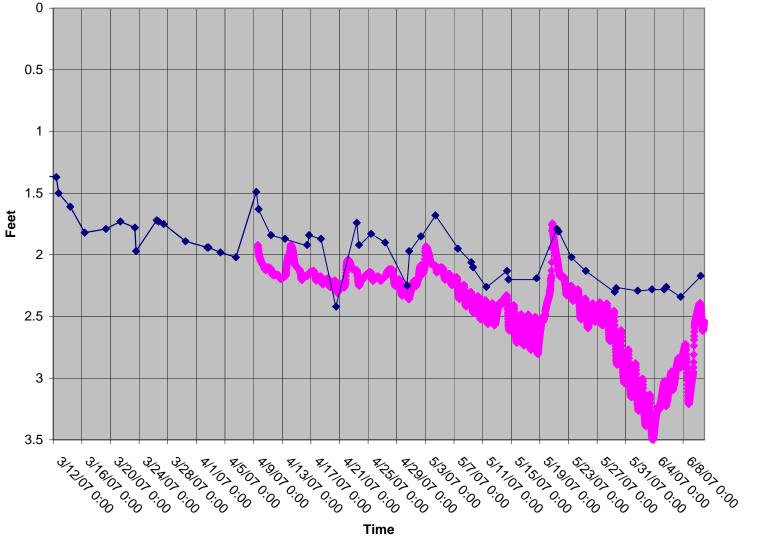
**→** A4

A-4



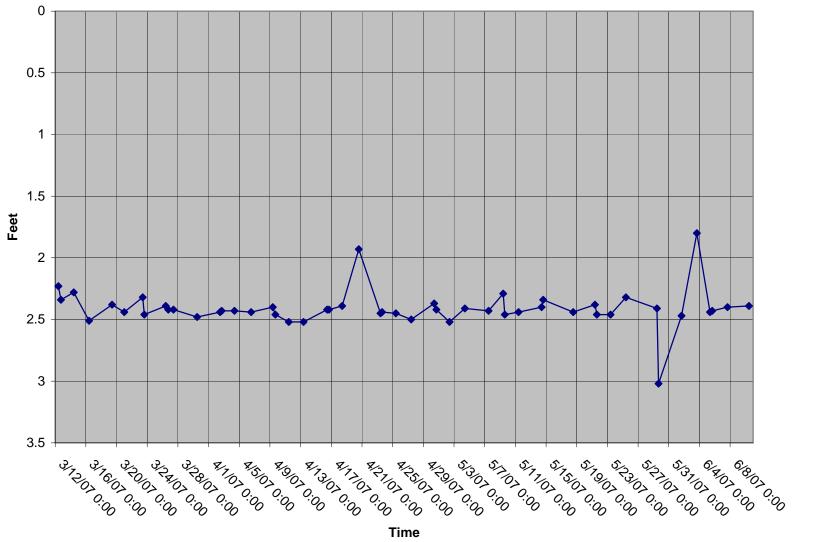
**→**B1

B-1



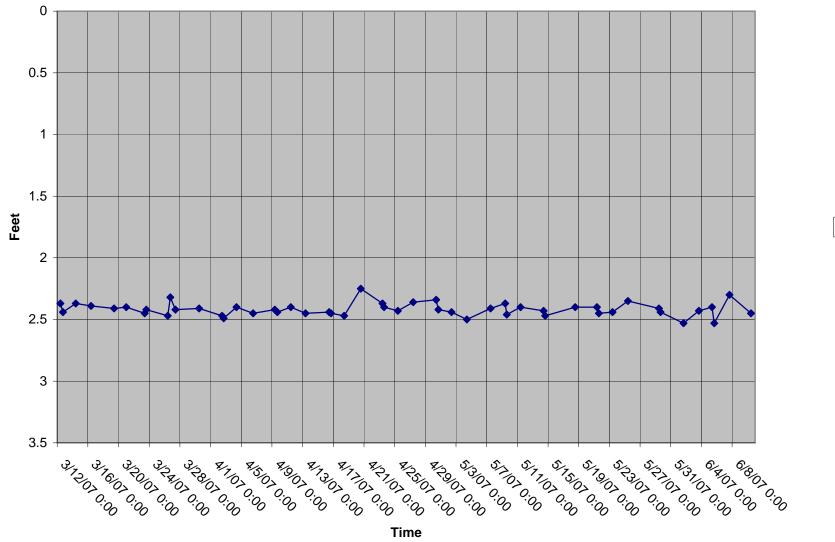


B-2



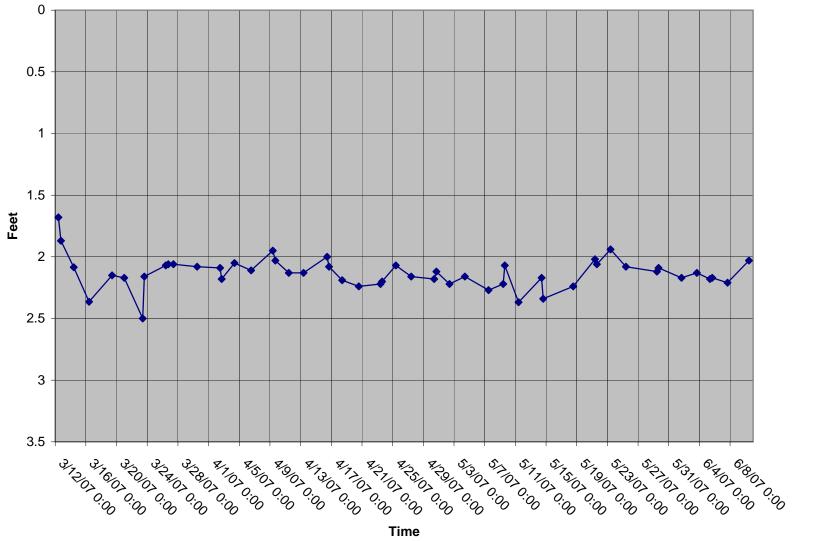
**→**B3

B-3



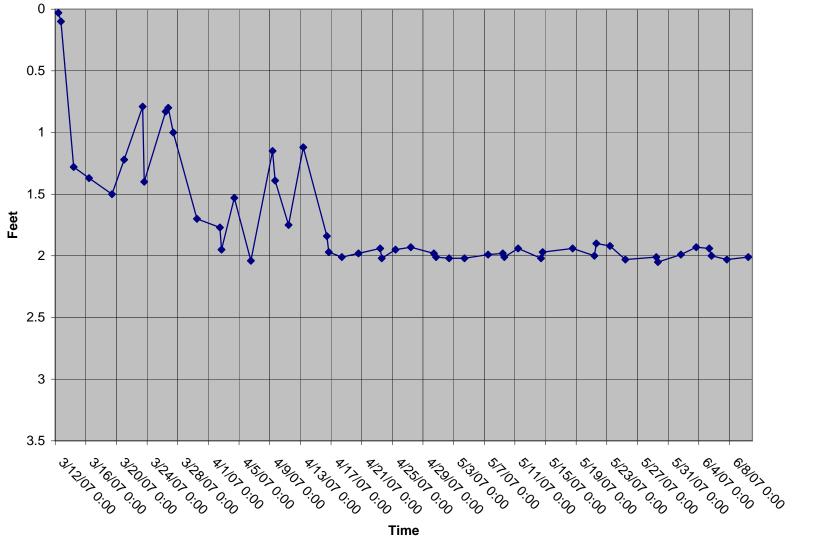
**→**B4

B-4



**→** B5

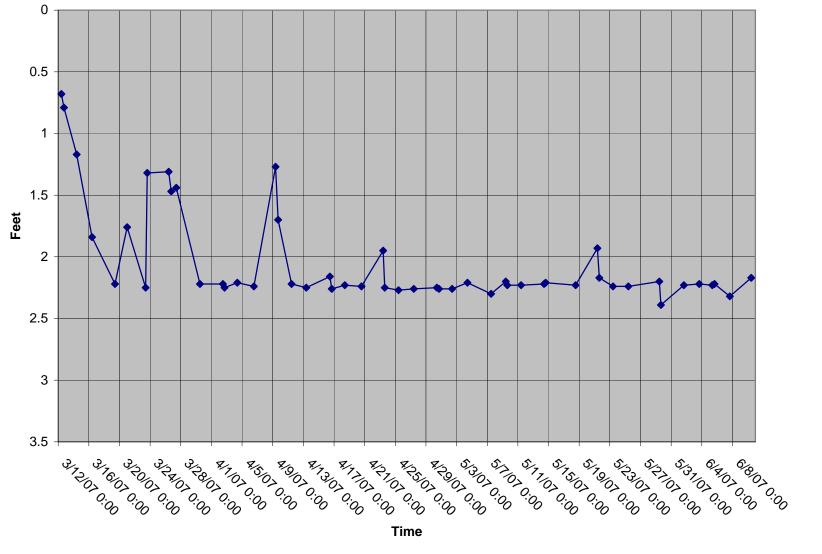
B-5



**→**C1

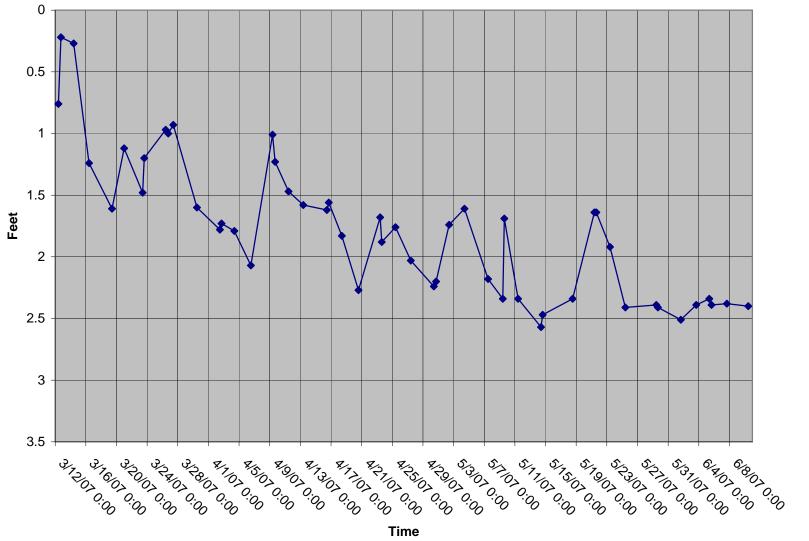
C-1

Time



**→** C2

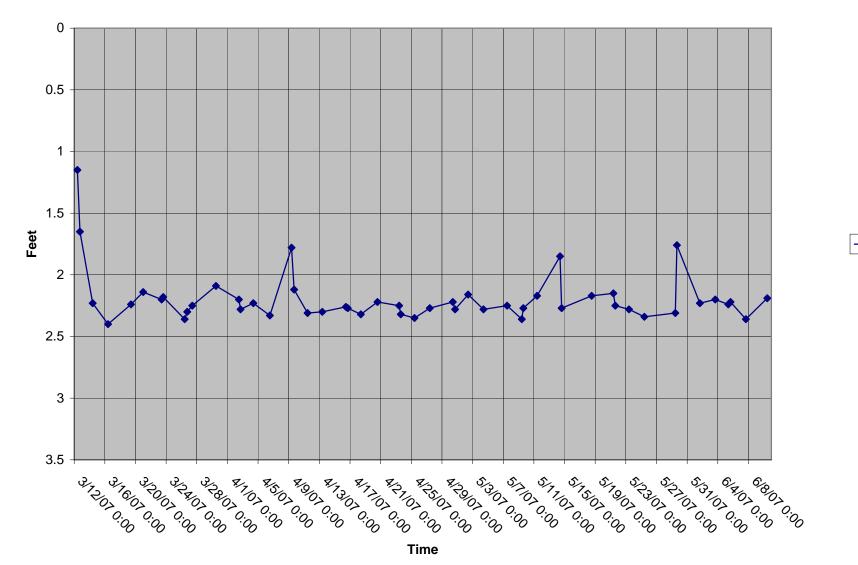
C-2



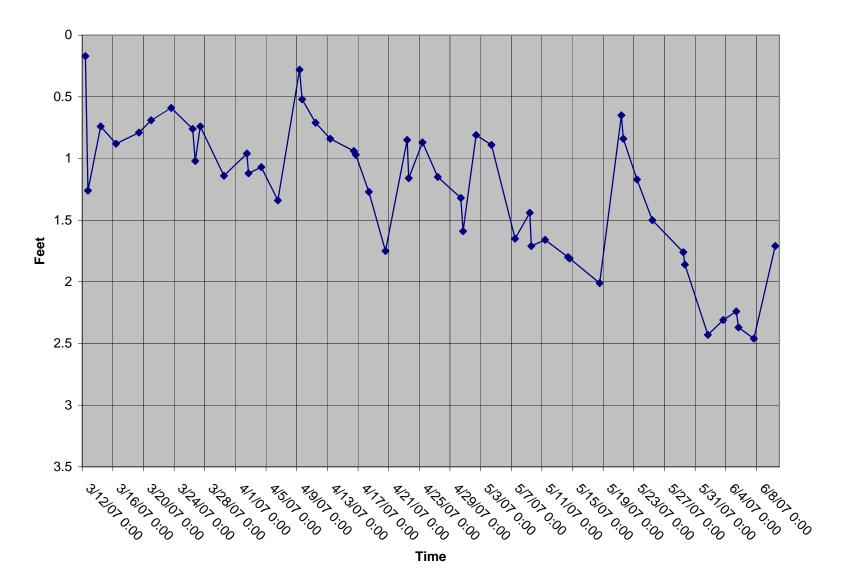
**→**C3

C-3

Time

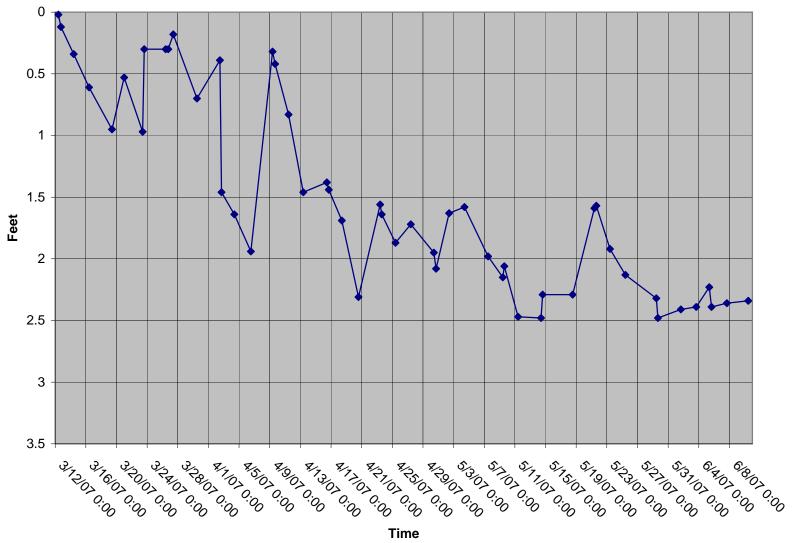


C-4



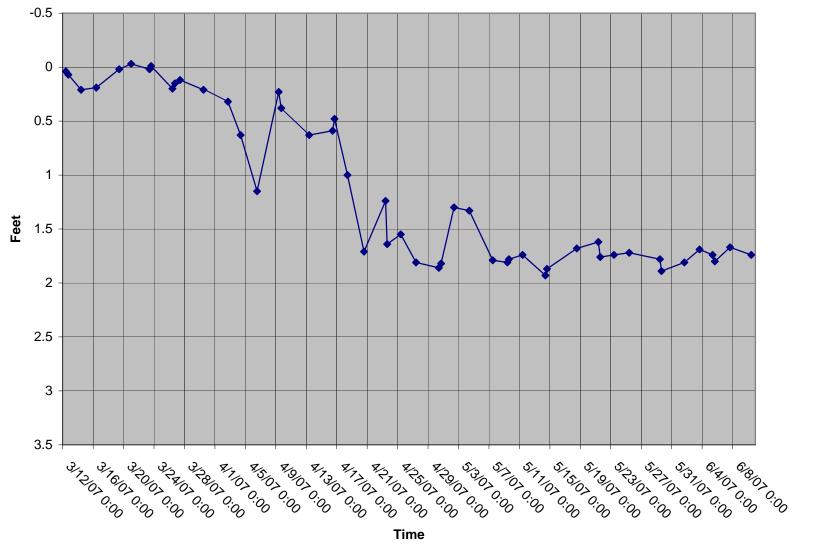
C-5

**→**C5



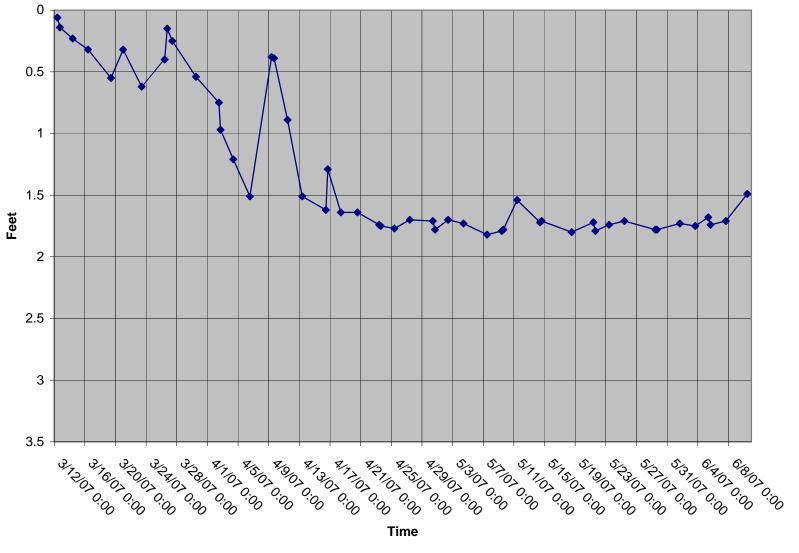
**→** D1

D-1





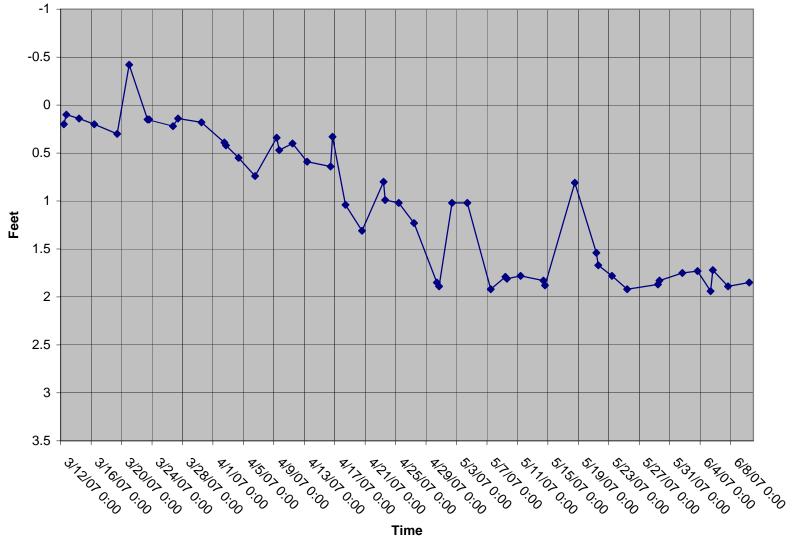
D-2



**→** D3

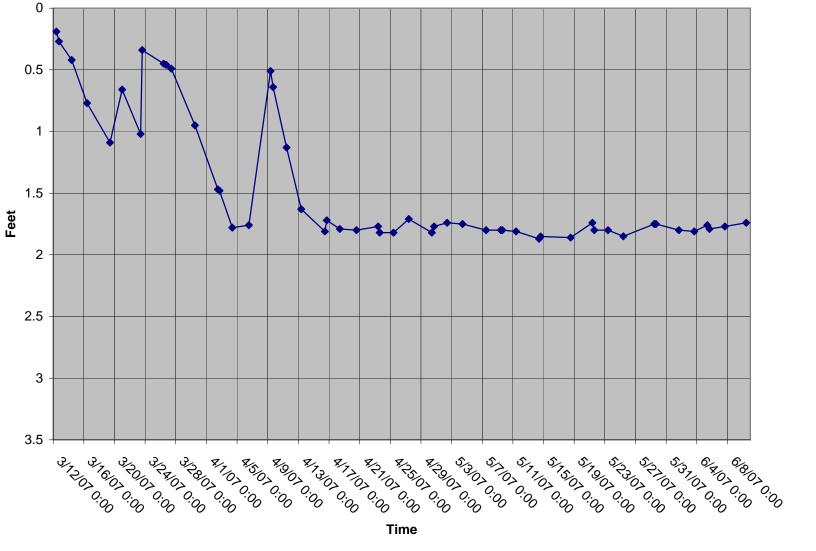


D-3





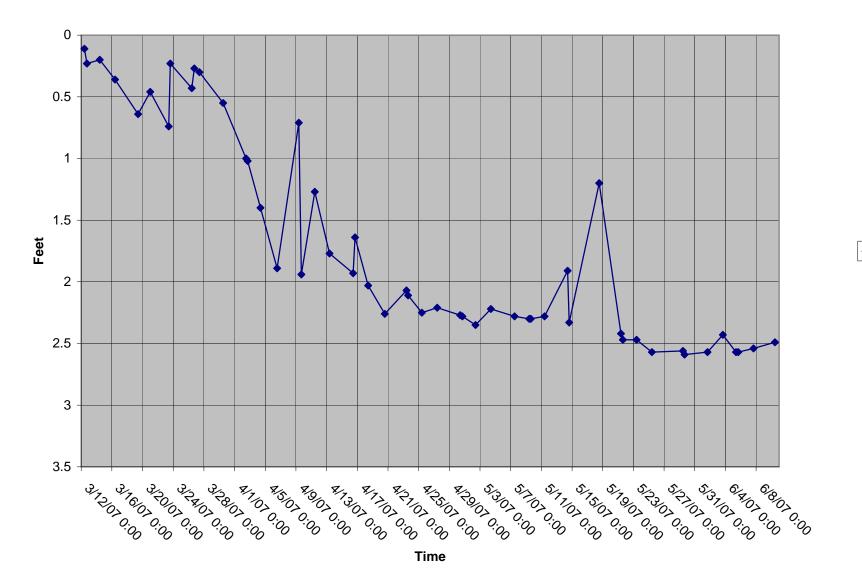
D-4



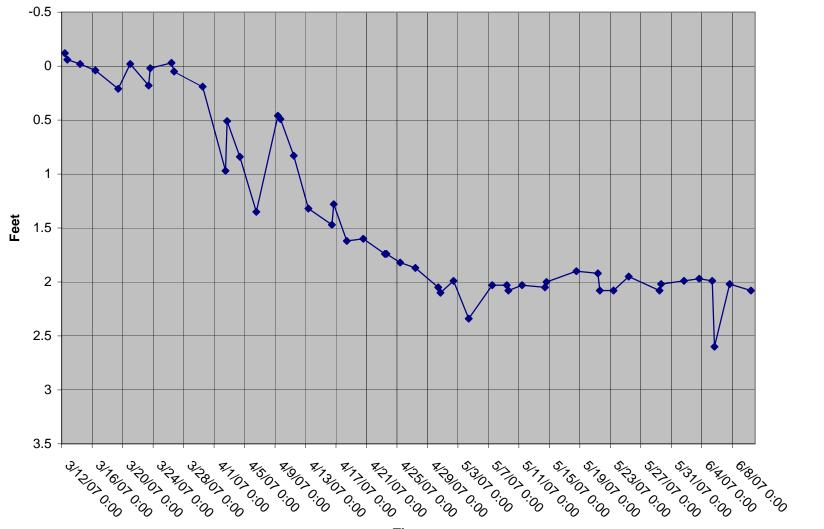
**→** D5



D-5

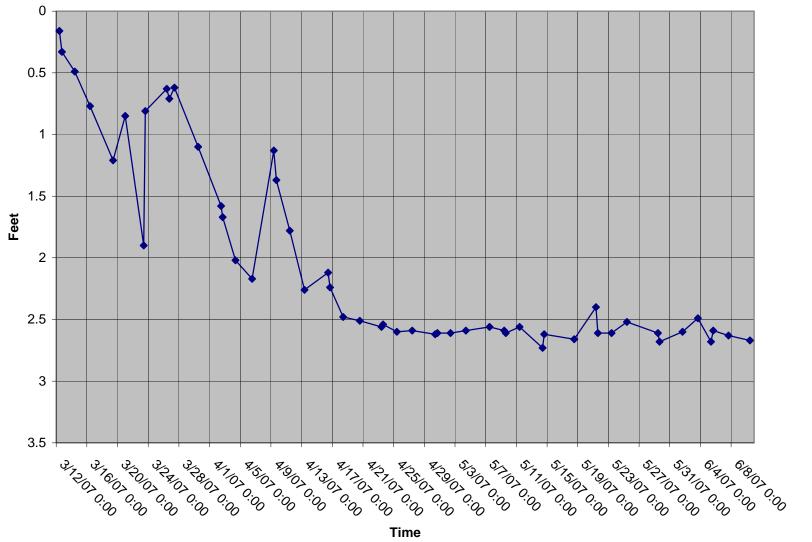


E-1



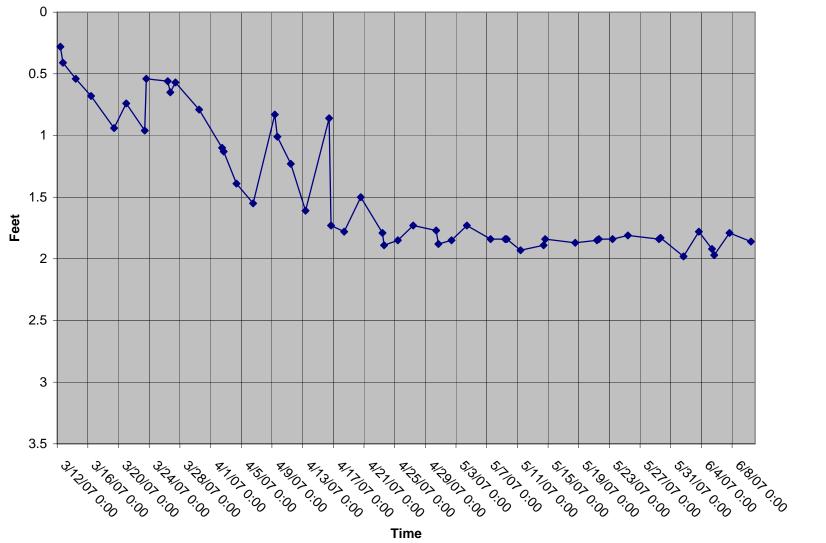
**→**E2

E-2



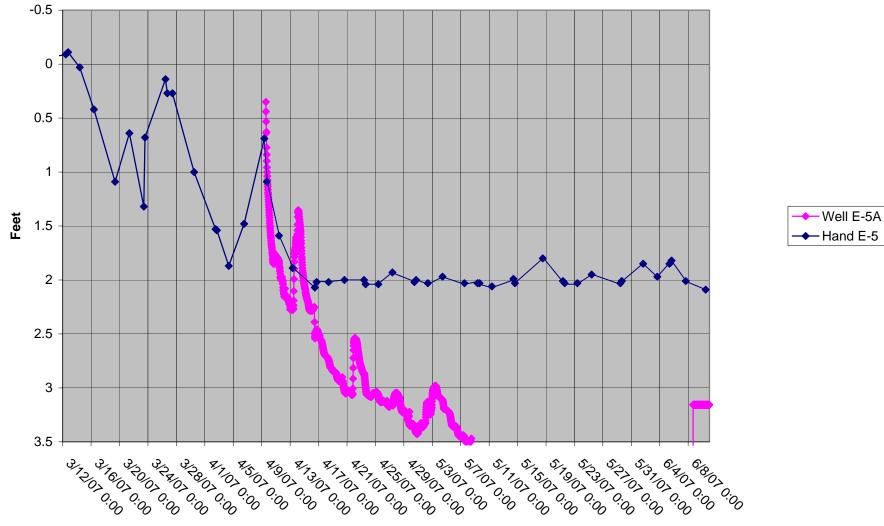
**→**E3

E-3

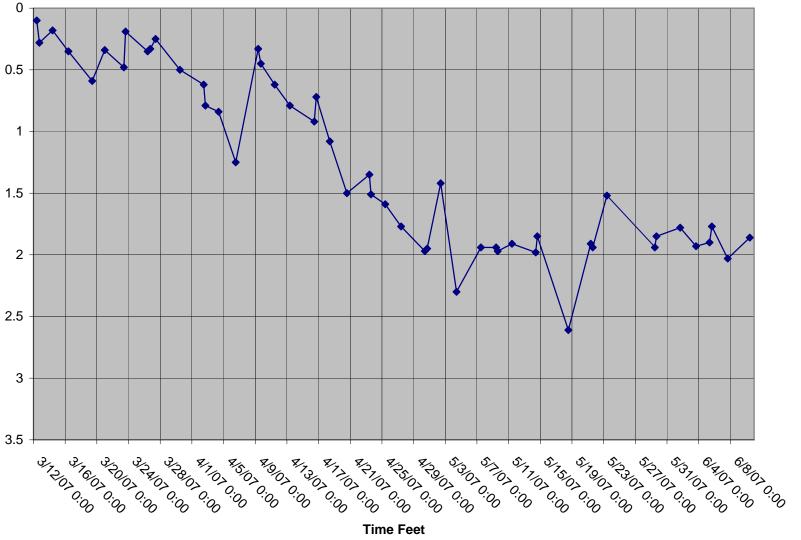


**→** E4

E-4

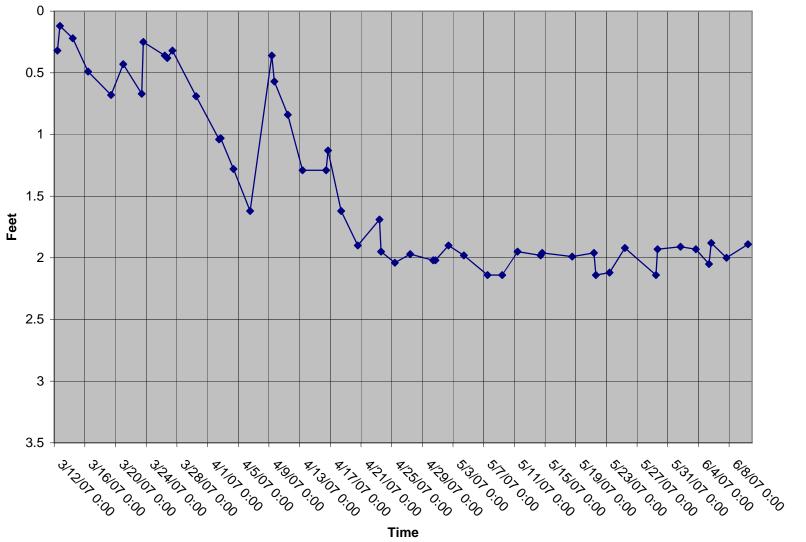


E-5



**→** E6

Time Feet



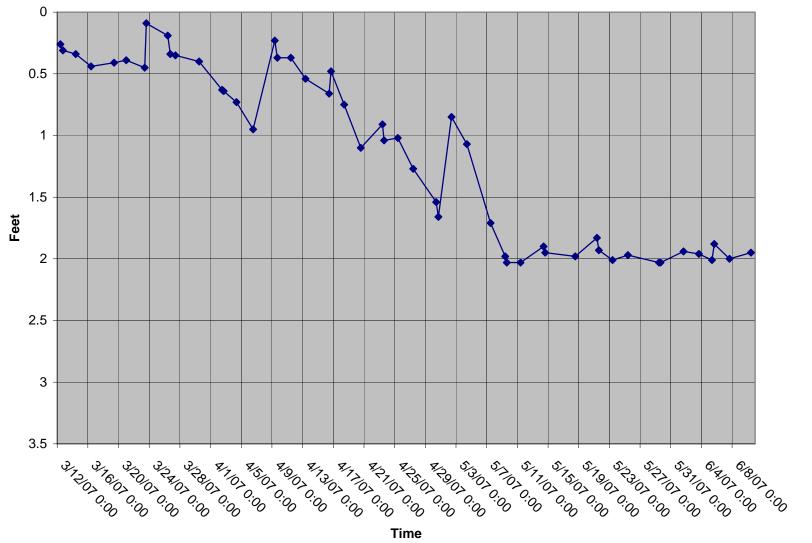


E-7



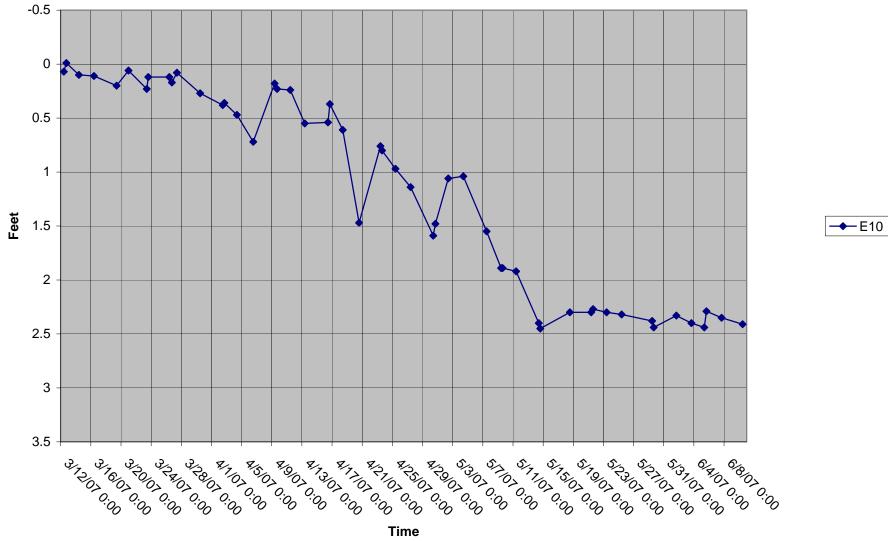
**→** E8

E-8

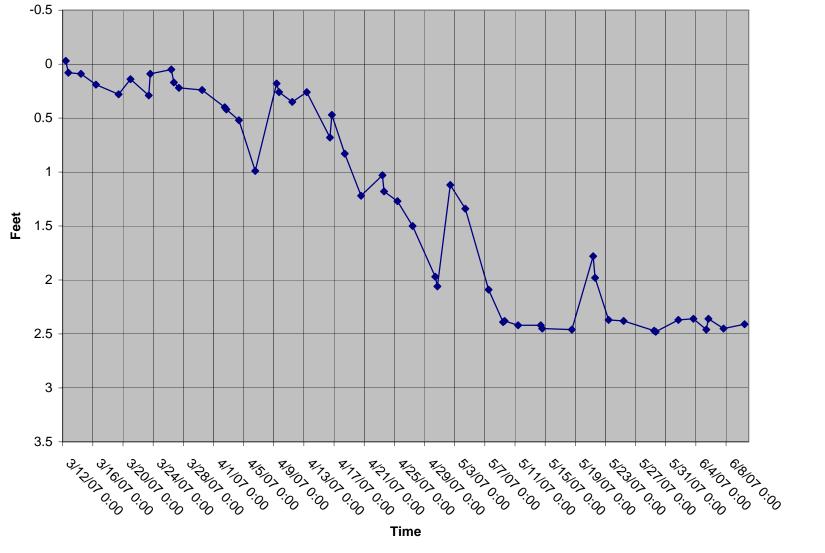


**→** E9

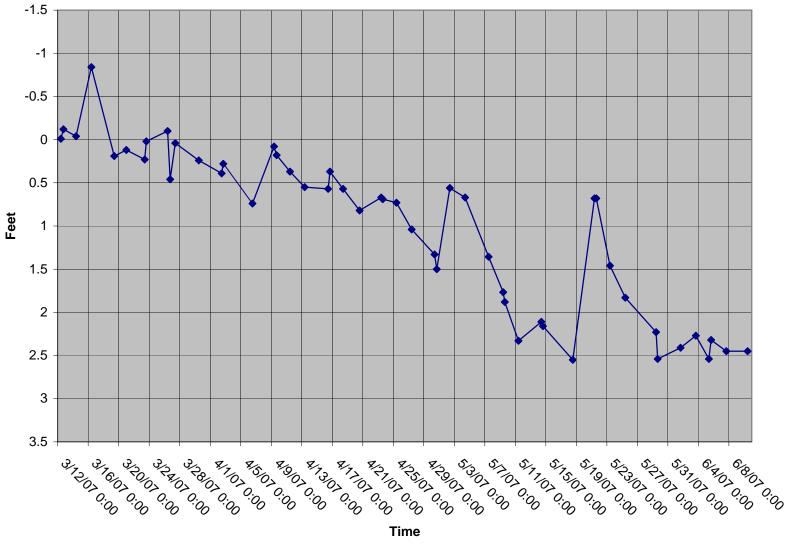




E-10

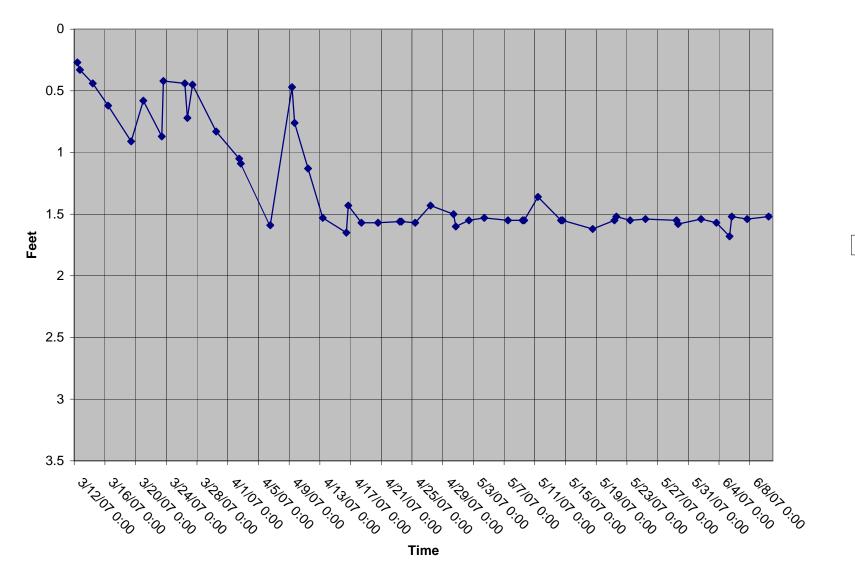


**→** E11

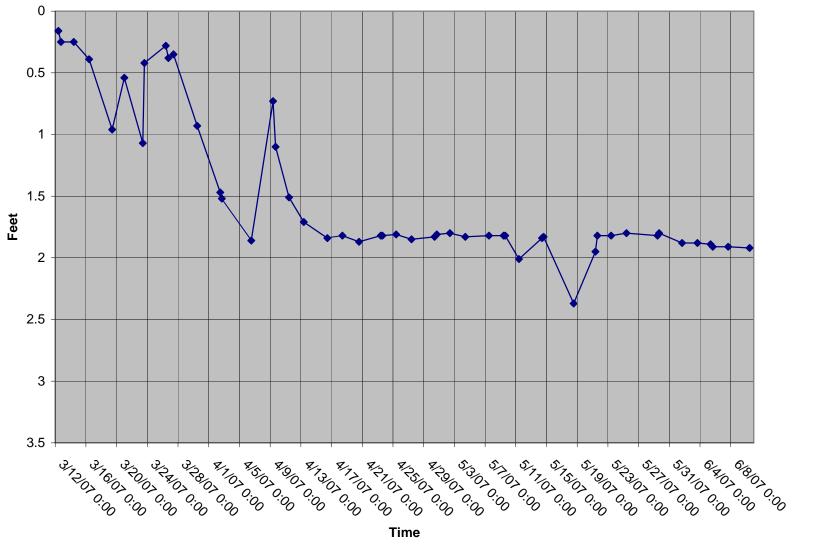


**→** F1

Time

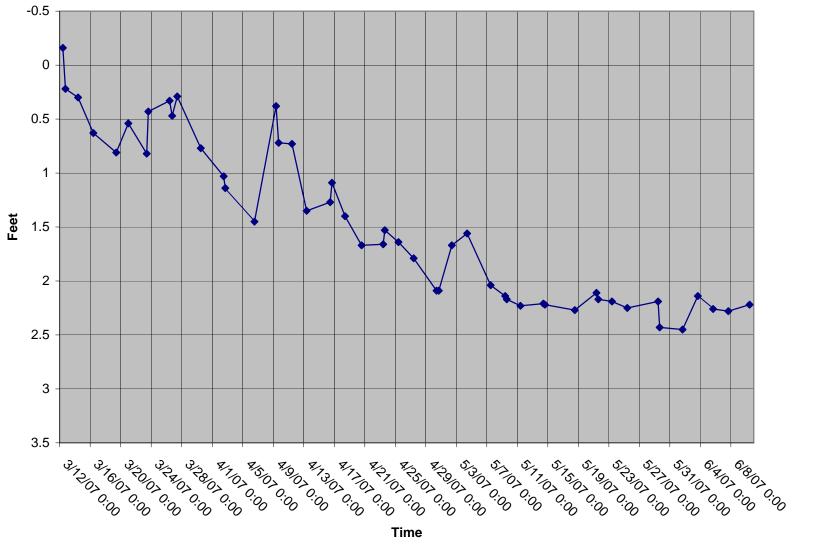


F-2

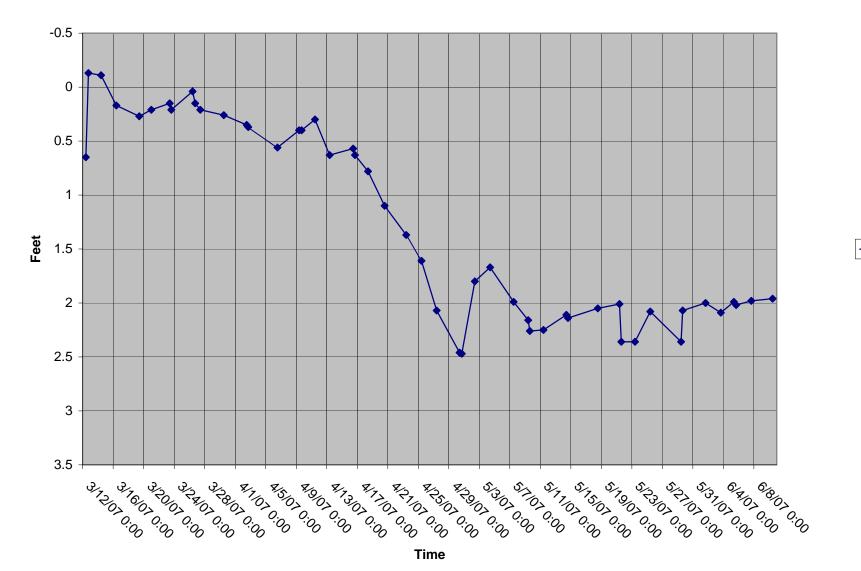


**→** F3

F-3

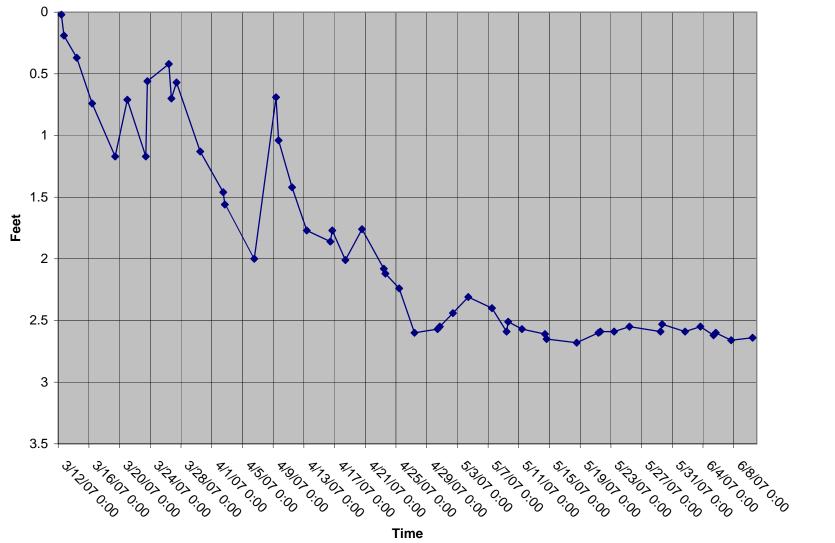


**→** F4



F-5

**→** F5



**→** F6

F-6



# **APPENDIX E** WETLANDS RATING FORMS

Wetland name or number A-1

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland A-1 Date of site visit: 6/19/07
Rated by Greg Allington Trained by Ecology? Yes_No_X Date of training
SEC: $32$ TWNSHP: $23N$ RNGE: $1W$ Is S/T/R in Appendix D? Yes No X
Map of wetland unit: Figure AppB Estimated size

## 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



Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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

Summary of basic information about the wetland unit

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

1

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?		$\sim$
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		$\times$
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		$\times$

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

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

### Classification of Wetland Units in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? (NO)  $\neq$  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. ).

 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<sub>2</sub> 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) NOF go to 4

- 4. Does the entire wetland unit meet all of the following criteria?
  - $\times$  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.

X 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 diapeter and less than 1 foot deep).

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

Wetland name or number A-

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 partial 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.

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

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

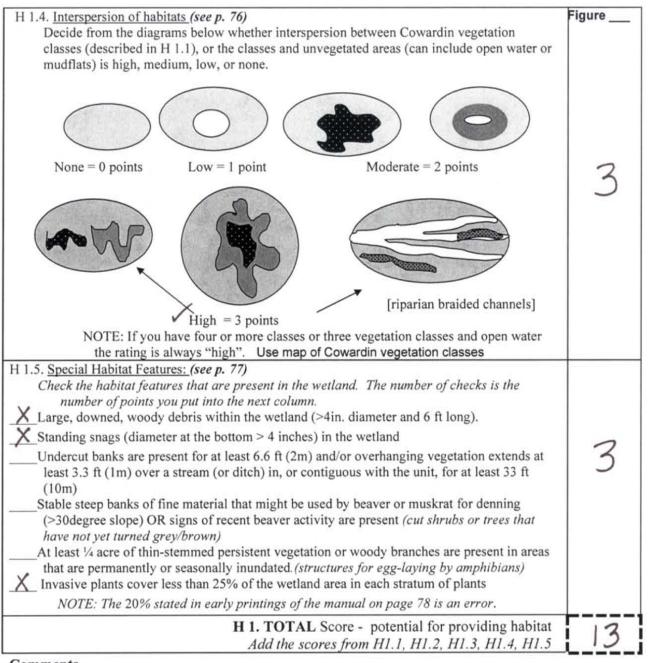
S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit:         Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft         horizontal distance)       points = 3         Slope is 1% - 2%       points = 2         Slope is 2% - 5%       points = 1         Slope is greater than 5%       points = 0	2
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> VYES = 3 points NO = 0 points	3
s	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: <i>Choose the points appropriate for the description that best fits the vegetation in the</i> <i>wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75%</i> <i>cover), and uncut means not grazed or mowed and plants are higher than 6 inches.</i> Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > ½ of area points = 1 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons	Figure
s	Total for S 1       Add the points in the boxes above	7
S	<b>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>	(see p.67)
	<ul> <li>Grazing in the wetland or within 150ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> <li>YES</li> <li>multiplier is 2</li> <li>NO</li> <li>multiplier is 1</li> </ul>	multiplier
S	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	14

Comments

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. points = 6 Vense, uncut, rigid vegetation > 1/2 area of wetland Dense, uncut, rigid vegetation > 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid         points = 0	3
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. NO points = 0	2
$\mathbf{S}$	Add the points in the boxes above	5
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.</li> <li>— Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>	(see p. 70)
	problems — Other	multiplier
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 (NO) multiplier is 1	<u> </u>
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	5

Comments

These questions apply to wetlands of all I HABITAT FUNCTIONS - Indicators that unit fu		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential t	o provide habitat for many	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if i Aquatic bed Emergent plants	init is smaller than 2.5 acres.	old for each	Figure
Scrub/shrub (areas where shrubs have >3 Forested (areas where trees have >30% of If the unit has a forested class check if: The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover 2 Add the number of vegetation structures that qualify	cover) canopy, sub-canopy, shrubs, her 20% within the forested polygor y. If you have:		4
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods regime has to cover more than 10% of the wetlan descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated A Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, on Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points	4 or more types present 4 or more types present 3 types present 2 types present 1 type present r adjacent to, the wetland		Figure
Freshwater tidal wetland = 2 points	Map of hydro	operiods	
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlan of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canan If you counted: List species below if you want to:	e size threshold)		1
		Total for	Dage 7



#### Comments

2. Does the wetland unit have the opportunity to provide habitat for many species?	0.52
2.1 Buffers (see p. 80)	Figure
<ul> <li>hoose the description that best represents condition of buffer of wetland unit. The highest scoring iterion that applies to the wetland is to be used in the rating. See text for definition of mdisturbed."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively</li> </ul>	
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 > 25% 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         — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference.       Points = 3         — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference.       Points = 3         — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference.       Points = 3         — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference.       Points = 3         — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference.       Points = 3         — 100 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference.       Points = 2         — No paved areas (e	3
Aerial photo showing buffers H 2.2 Corridors and Connections (see p. 81)	
H 2.2 <u>Connections and Connections</u> (see p. 67) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? ( <i>dams in riparian corridors, heavily used gravel</i> roads, paved roads, are considered breaks in the corridor). (YES + 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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	4
acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3	
acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?	

Total for page T

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	1
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	`
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point 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)	

Wetland name or number \_\_\_\_\_

,

Wetland name or number <u>A-2</u>

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland A-2 Date of site visit: 6/19/07
Rated by Greg Allington Trained by Ecology? Yes_No X Date of training
SEC: 32 TWNSHP: 23NRNGE: $W$ Is S/T/R in Appendix D? Yes No X
Map of wetland unit: Figure App B Estimated size

## 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

4
2
14
20

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_\_ II\_\_\_ Does not Apply X

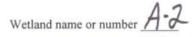
Final Category (choose the "highest" category from above)

I

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	and a
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	X
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	

August 2004



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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)		NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		~
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		X
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.		×

## 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.

2

### Classification of Wetland Units in Western Washington

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

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

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

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

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

NO2 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?
  - X 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 A-2

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.* 

NOL go to 7 YES – The wetland class is Depressional

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

(NO)- go to 8 YES – The wetland class is Depressional

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

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

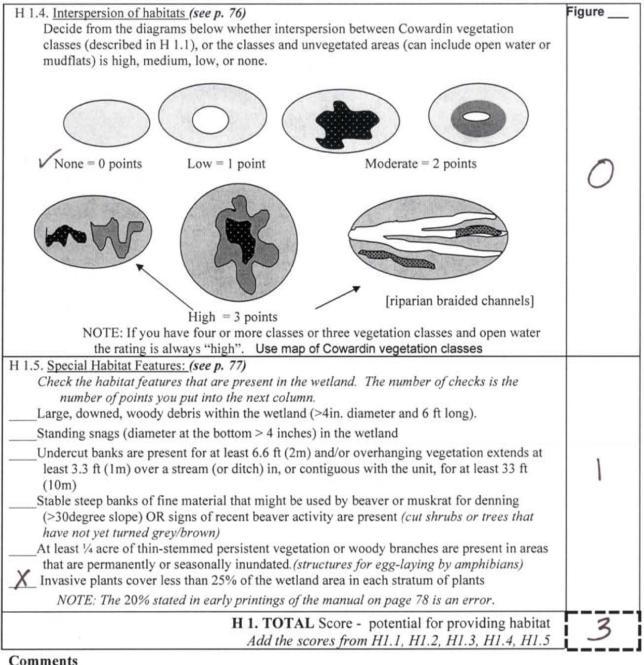
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit:Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 fthorizontal distance)Slope is 1% - 2%Slope is 2% - 5%Slope is greater than 5%	2
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES = 3 points	0
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants:         Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.         Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6         Dense, uncut, herbaceous vegetation > 1/2 of area points = 3         Dense, woody, vegetation > ½ of area points = 1         V Does not meet any of the criteria above for vegetation points = 0         Aerial photo or map with vegetation polygons	Figure
$\mathbf{S}$	Total for S 1         Add the points in the boxes above	2
S	<b>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>	
	<ul> <li>Grazing in the wetland or within 150ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier
S	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	4

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. points = 6 Dense, uncut, rigid vegetation > 1/2 area of wetland Dense, uncut, rigid vegetation > 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid         points = 0	0
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	2
S	Add the points in the boxes above	2
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i></li> <li>— Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>	
	problems — Other	multiplier
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1	
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	2

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)	These questions apply to wetlands of all HABITAT FUNCTIONS - Indicators that unit for		habitat	Points (only 1 scor per box)
Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.         Aquatic bed	H 1. Does the wetland unit have the potential	to provide habitat for many	species?	
Map of Cowardin vegetation classes       4 structures or more points = 4 3 structures points = 2 2 structures points = 1 points = 0         H 1.2. Hydroperiods (see p. 73)       Figure	Check the types of vegetation classes present (as d class is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strata moss/ground-cover) that each cover	<ul> <li>unit is smaller than 2.5 acres.</li> <li>30% cover)</li> <li>cover)</li> <li>(canopy, sub-canopy, shrubs, he 20% within the forested polygor</li> </ul>	rbaceous,	Figure
H 1.2. Hydroperiods (see p. 73)       Figure _         Check the types of water regimes (hydroperiods) present within the wetland. The water       regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for         descriptions of hydroperiods)       Permanently flooded or inundated       4 or more types present points = 3         Seasonally flooded or inundated       3 types present points = 2         ✓ Occasionally flooded or inundated       2 types present points = 0         Permanently flowing stream or river in, or adjacent to, the wetland       1 type present points = 0         Permanently flowing stream in, or adjacent to, the wetland       Lake-fringe wetland = 2 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 that cover at least 10 ft <sup>2</sup> . (different patches of the same species can be combined to meet the size threshold)         You do not have to name the species.       Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle If you counted:         If you counted:       > 19 species       points = 2         List species below if you want to:       19 species       points = 1		4 structures or more 3 structures 2 structures	points = 2 points = 1	
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle If you counted: > 19 species points = 2 List species below if you want to: V5 - 19 species points = 1	Check the types of water regimes (hydroperiod regime has to cover more than 10% of the wetla descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, of Seasonally flowing stream in, or adjacen Lake-fringe wetland = 2 points	4 or more types present 3 types present 2 types present 1 type present or adjacent to, the wetland t to, the wetland	for points = 3 points = 2 point = 1 points = 0	1
	H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetla of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed cand If you counted:	and that cover at least 10 ft <sup>2</sup> . ( <i>dif</i> the size threshold) arygrass, purple loosestrife, Can > 19 species $\sqrt{5} - 19$ species	ferent patches madian Thistle points = 2 points = 1	1

Wetland name or number A-2



2. Does the wetland unit have the opportunity to provide habitat for many species?	2.55 10 0.54
2.1 Buffers (see p. 80)	Figure
hoose the description that best represents condition of buffer of wetland unit. The highest scoring	_
iterion 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	
<ul> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;</li> </ul>	
50% circumference. Points = 4	
<ul> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95%</li> </ul>	
circumference. Points = 4	3
— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25%	2
circumference, . Points = 3	
$\bigvee$ 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	
<ul> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95%</li> </ul>	
circumference. Light to moderate grazing, or lawns are OK. Points = 2	
<ul> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference.</li> </ul>	
Light to moderate grazing, or lawns are OK. Points = 2	
— Heavy grazing in buffer. Points = 1	
<ul> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled</li> </ul>	
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  points (go to H 2.3)  NO = go to H 2.2.2	
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	4
(either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or	1
forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in	1
the question above?	
$YES = 2 \text{ points } (go \text{ to } H 2.3) \qquad NO = H 2.2.3$	
H 2.2.3 Is the wetland: $(go to H 2.3)$ $(Go to H 2.3)$	
ELZ 2.3 IN THE WEIGHT	
	1
within 5 mi (8km) of a brackish or salt water estuary OR	

Total for page t

Wetland name or number \_\_\_\_\_

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: t	he
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	ot
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (	8
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	f
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
<b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	,
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other <i>priority habitats</i> , especially those that would otherwise be	0
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (1) acres) and is surrounded by urban development.	
<b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	d
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	*
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	e
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If we land 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	t l
list. Nearby wetlands are addressed in question H 2.4)	

Wetland name or number \_\_\_\_\_

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         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	3
There is at least 1 wetland within $\frac{1}{2}$ mile.points = 2There are no wetlands within $\frac{1}{2}$ mile.points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	1]
TOTAL for H 1 from page 14	3
Fotal Score for Habitat Functions – add the points for H 1, H 2 and record the result on	14

Wetland name or number <u>A-3</u>

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland A-3 Date of site visit: 6/19/07
Rated by Greg Allington Trained by Ecology? Yes_No X Date of training
SEC: <b>32</b> TWNSHP: <b>23</b> NRNGE: <u>IW</u> Is S/T/R in Appendix D? Yes No_X
Map of wetland unit: Figure App B Estimated size

# 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



Category based on SPECIAL CHARACTERISTICS of wetland

I II Does not Apply X

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

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	(Rest
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	X
Bog	Lake-fringe	1
Mature Forest	Slope	
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	Γ

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?	YES	10
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		$\times$
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**

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

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

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

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

 The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit. (NO) go to 3
 YES – The wetland class is Flats

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

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

#### 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).
  - ) go to 5 YES The wetland class is Slope

NO

Wetland name or number A - 3

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

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

flooding from that stream or river

X 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 **(ES)** 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.

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

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

4

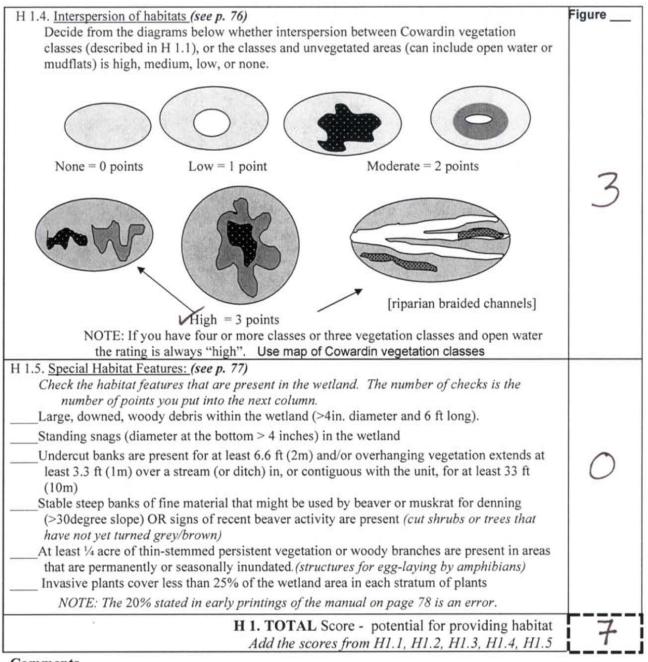
Wetland name or number A - 3

R	Riverine and Freshwater Tidal Fringe Wetlands WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	Points (only 1 score per box)
R	R 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.52)
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:	Figure
	Depressions cover $>3/4$ area of wetlandpoints = 8Depressions cover $> 1/2$ area of wetlandpoints = 4If depressions $> \frac{1}{2}$ of area of unit draw polygons on aerial photo or map	2
	V Depressions present but cover < 1/2 area of wetland points = 2 No depressions present points = 0	
R	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height):         Trees or shrubs > 2/3 the area of the unit       points = 8         Trees or shrubs > 1/3 area of the unit       points = 6         Ungrazed, herbaceous plants > 2/3 area of unit       points = 6         Ungrazed herbaceous plants > 1/3 area of unit       points = 3         Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit	Figure
R	Add the points in the boxes above	8
R	<ul> <li>R 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. — Grazing in the wetland or within 150ft ↓ Untreated stormwater discharges to wetland ↓ Tilled fields or orchards within 150 feet of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality Orthered water gravity. — Residential standards for water quality — Residential standards for water quality — Residential standards for water quality — Residential standards for water quality</li></ul>	
	YES multiplier is 2 NO multiplier is 1	2
R	TOTAL - Water Quality Functions Multiply the score from R 1 by R 2	17

Wetland name or number <u>A-3</u>

R	Riverine and Freshwater Tidal Fringe Wetlands HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	Points (only 1 score per box)
	R 3. Does the wetland unit have the potential to reduce flooding and erosion?	(see p.54)
R	R 3.1 Characteristics of the overbank storage the unit provides: Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit)/(average width of stream between banks). If the ratio is more than 20 points = 9	Figure
	If the ratio is between $10 - 20$ points = 6If the ratio is $5 - <10$ points = 4If the ratio is $1 - <5$ points = 2If the ratio is $< 1$ points = 1Aerial photo or map showing average widths	7
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes):         V Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area points = 7         Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4         Vegetation does not meet above criteria points = 0         Aerial photo or map showing polygons of different vegetation types	Figure
R	Add the points in the boxes above	11
R	<ul> <li>R 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. Note which of the following conditions apply.         <ul> <li>There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding.</li> <li>X There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding</li> </ul> </li> </ul>	
	<ul> <li>Other</li></ul>	multiplier
R	<b>TOTAL - Hydrologic Functions</b> Multiply the score from R 3 by R 4 Add score to table on p. 1	22

<b>I 1. Does the wetland unit have the <u>potential</u> to put 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as defined</b>	rovide habitat for many	anagion?	
Check the types of vegetation classes present (as defined		species:	
class is ¼ acre or more than 10% of the area if unit i Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >30% Forested (areas where trees have >30% cover	is smaller than 2.5 acres.	old for each	Figure
If the unit has a forested class check if: The forested class has 3 out of 5 strata (cano moss/ground-cover) that each cover 20% Add the number of vegetation structures that qualify. If Map of Cowardin vegetation classes	within the forested polygor		1
<ul> <li>1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) proceedings of hydroperiods)</li> <li>Permanently flooded or inundated</li> <li>X Seasonally flooded or inundated</li> <li>Occasionally flooded or inundated</li> <li>X Saturated only</li> <li>X Permanently flowing stream or river in, or adj. Seasonally flowing stream in, or adjacent to, to</li> </ul>	4 or more types present 3 types present 2 types present 1 type present acent to, the wetland he wetland	points = 3 points = 2 point = 1 points = 0	Figure
Freshwater tidal wetland = 2 points 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland the of the same species can be combined to meet the size. You do not have to name the species. Do not include Eurasian Milfoil, reed canarygred If you counted: List species below if you want to:	e threshold) ass, purple loosestrife, Can > 19 species 5 - 19 species	erent patches	1



2. Does the wetland unit have the opportunity to	provide intritucion intily species.	Figure
<ul> <li>2.1 <u>Buffers</u> (see p. 80)</li> <li>hoose the description that best represents condition of biliterion that applies to the wetland is to be used in the raundisturbed." <ul> <li>100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the ur undisturbed also means no-grazing, no landscapin</li> <li>100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated a circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated a circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated a so% circumference.</li> <li>If buffer does not meet any of</li> <li>No paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or law</li> <li>No paved areas or buildings within 50m of wetlan Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more t fields, paving, basalt bedrock extend to edge of we Buffer does not meet any of the criteria above.</li> </ul> </li> </ul>	ting. See text for definition of areas, rocky areas, or open water >95% adisturbed part of buffer. (relatively g, no daily human use) Points = 5 areas, rocky areas, or open water > Points = 4 areas, rocky areas, or open water >95% Points = 4 areas, rocky areas, or open water >25% Points = 3 areas, rocky areas, or open water for > Points = 3 areas, rocky areas, or open water for > Points = 3 the criteria above within 25 m (80ft) of wetland > 95% ns are OK. Points = 2 points = 1 han 95% of the circumference (e.g. tilled	Figure _
<ul> <li>A Buffer does not meet any of the criteria above. Aeria </li> <li>H 2.2 Corridors and Connections (see p. 81) </li> <li>H 2.2.1 Is the wetland part of a relatively undisturbed         <ul> <li>(either riparian or upland) that is at least 150 ft wide             or native undisturbed prairie, that connects to estuar             uplands that are at least 250 acres in size? (dams in             roads, paved roads, are considered breaks in the con             VYES = 4 points (go to H 2.3)             H 2.2.2 Is the wetland part of a relatively undisturbee             (either riparian or upland) that is at least 50ft wide, If             forest, and connects to estuaries, other wetlands or u             acres in size? OR a Lake-fringe wetland, if it does             the question above?             YES = 2 points (go to H 2.3)             H 2.2.3 Is the wetland:             within 5 mi (8km) of a brackish or salt water             within 5 mi of a large field or pasture (&gt;40 acres?             YES = 1 point         </li> </ul></li></ul>	I photo showing buffers ed and unbroken vegetated corridor e, has at least 30% cover of shrubs, forest ies, other wetlands or undisturbed <i>riparian corridors, heavily used gravel</i> <i>rridor</i> ). NO = go to H 2.2.2 ed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 not have an undisturbed corridor as in NO = H 2.2.3 estuary OR cres) OR NO = 0 points	4 Page 2

Total for page

<ul> <li>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)</li> <li>Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>These are DFW definitions. Check with your local DFW biologist if there are any questions.</li> <li>Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li>Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</li> <li>Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li>Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</li> <li>Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; 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.</li> <li>Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</li> <li>Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</li> <li>Cavees: A naturally occurring cavity, recess, void, or system of interconnected passages</li> <li>Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</li> <li>Urban Natural Open Space: A priority habitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</li> <li>K</li></ul>	1
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).	

Wetland name or number \_\_\_\_\_

The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within <sup>1</sup> / <sub>2</sub> mile points = 5 There are at least 3 other wetlands within <sup>1</sup> / <sub>2</sub> 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 <sup>1</sup> / <sub>2</sub> mile points = 3	3
There is at least 1 wetland within $\frac{1}{2}$ mile.points = 2There are no wetlands within $\frac{1}{2}$ mile.points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	9
TOTAL for H 1 from page 14	7
<b>Fotal Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on	16

17

Wetland name or number A - 4

WETLAND RATING FORM – WESTERN V Version 2 - Updated July 2006 to increase accuracy and reprodu	
Name of wetland (if known): Wetland A-4	Date of site visit: 6/20/07
Rated by Greg Allington Trained by Ecology? Y	ves_NoX Date of training
SEC: $32$ TWNSHP: $23W$ RNGE: $1W$ Is S/T/R in Appendix D?	Yes No
Map of wetland unit: Figure App B Estimate	ed size

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I\_\_ II\_\_ III\_\_ IV∑

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

4
2
11
17

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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

I

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

Summary of basic information about the wetland unit

Wetland name or number <u>A-4</u>

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?		$\vee$
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\wedge$
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).		Х
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.		Х

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

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

Wetland name or number A-4

#### Classification of Wetland Units in Western Washington

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

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

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

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

 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  $\frac{1}{2}$  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?
  - X 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.

X 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 A-4

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 -

YES – The wetland class is Depressional

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

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

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

4

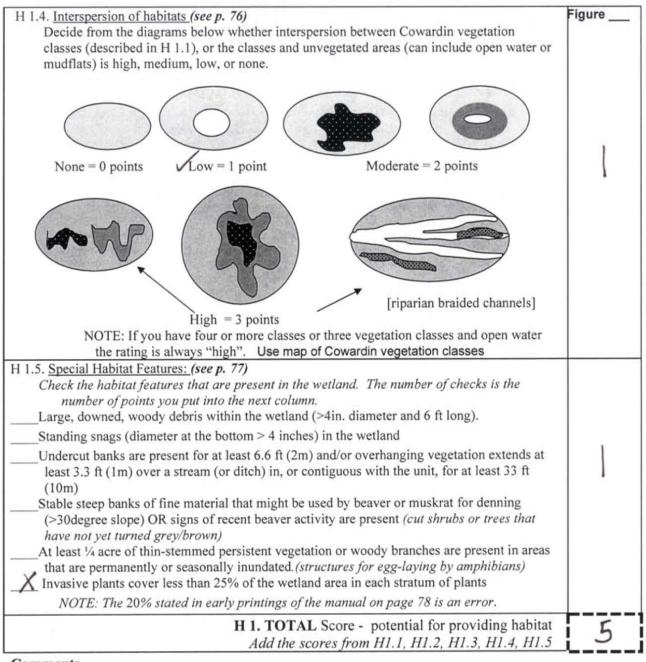
S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit:         Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)         v       points = 3         v       Slope is 1% - 2%         Slope is 2% - 5%       points = 1         Slope is greater than 5%       points = 0	2
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES = 3 points NO = 0 points	0
S	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.</li> <li>Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3 Dense, woody, vegetation &gt; 1/2 of area points = 1</li> <li>Dense, uncut, herbaceous vegetation &gt; 1/4 of area points = 1</li> <li>Does not meet any of the criteria above for vegetation polygons</li> </ul>	Figure
s	Total for S 1       Add the points in the boxes above	2
S	S 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.	(see p.67)
	<ul> <li>Grazing in the wetland or within 150ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li></ul>	multiplier
s	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	4

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. points = 6 Dense, uncut, rigid vegetation > 1/2 area of wetland Dense, uncut, rigid vegetation > 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid         points = 0	0
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	2
S	Add the points in the boxes above	2
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.</li> <li>— Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>	(see p. 70)
	problems	multiplier
	<ul> <li>Other</li> <li>(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side (a dam)</li> <li>YES multiplier is 2 (NO) multiplier is 1</li> </ul>	
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	2

Wetland name or number  $\underline{A-4}$ 

IGM classes. nctions to provide important	habitat	Points (only 1 scor per box)
o provide habitat for many	species?	
fined by Cowardin)- Size thresh nit is smaller than 2.5 acres. 0% cover) over) canopy, sub-canopy, shrubs, he 0% within the forested polygon	rbaceous,	Figure
4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
4 or more types present 4 or more types present 2 types present 1 type present r adjacent to, the wetland to, the wetland	for points = 3 points = 2 point = 1 points = 0	1
d that cover at least 10 ft <sup>2</sup> . ( <i>difjesize threshold</i> )	ferent patches	۱
	nctions to provide important o provide habitat for many fined by Cowardin)- Size thresh mit is smaller than 2.5 acres. 10% cover) over) canopy, sub-canopy, shrubs, her 10% within the forested polygon 2 (19 you have: 4 structures or more 3 structures 2 structures 1 structure 2 structures 1 structure 2 structures 1 structure 3 types present 2 types present 2 types present 1 type present 1 type present 2 types present 1 type present 1 type present 2 types present 1 type present 3 types present 2 types present 1 type present 1 type present 3 dor the wetland to, the wetland Map of hydr d that cover at least 10 ft <sup>2</sup> . (diff e size threshold) ygrass, purple loosestrife, Can 5 - 19 species	nctions to provide important habitat o provide habitat for many species? fined by Cowardin)- Size threshold for each mit is smaller than 2.5 acres. 0% cover) over) canopy, sub-canopy, shrubs, herbaceous, 0% within the forested polygon b. If you have: 4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0 c) present within the wetland. The water ad or ¼ acre to count. (see text for 4 or more types present points = 3 b types present points = 2 2 types present points = 0 adjacent to, the wetland to, the species points = 2 5 - 19 species points = 1 1 species points = 2 5 - 19 species points = 1 1 species points = 1 1 species points = 2 1 species points = 1 1 species

Wetland name or number <u>A-4</u>



<b>I 2.</b> Does the wetland unit have the opportunity to provide habitat for many species?	
2.1 <u>Buffers</u> (see p. 80)	Figure
hoose the description that best represents condition of buffer of wetland unit. The highest scoring	
riterion 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	
<ul> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95%</li> </ul>	
circumference. Points = $4$	1
— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25%	1
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 power and trails) or buildings within 25 m ( $80^{\text{(f)}}$ ) of watland > $05\%$	
— 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	
<ul> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference.</li> </ul>	
Light to moderate grazing, or lawns are OK. Points = $2$	
<ul> <li>Heavy grazing in buffer.</li> <li>Points = 1</li> </ul>	
<ul> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled</li> </ul>	
$\sim$ fields, paving, basalt bedrock extend to edge of wetland $\sim$ <b>Points = 0</b> .	
$\times$ 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).	
$YES = 4 \text{ points} (go to H 2.3) \qquad NO = go to H 2.2.2$	
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	1
(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? $NO = 11222$	
$YES = 2 \text{ points } (go \text{ to } H 2.3) \qquad NO = H 2.2.3$	
H 2.2.3 Is the wetland:	
within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR	
within J mi of a lake greater than 20 acres?	
(YES) = 1  point NO = 0 points	

Total for page 🖌

• 4

Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	]
TOTAL for H 1 from page 14	5
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
<ul> <li>2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile</li> <li>There are at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	3

Wetland name or number <u>A-5</u>

WETLAND RATING FORM – WESTERN WAS Version 2 - Updated July 2006 to increase accuracy and reproducible	
Name of wetland (if known): Wetland A-5	Date of site visit: 6/20/07
Rated by Greg Allington Trained by Ecology? Yes_	No X Date of training
SEC: 32 TWNSHP: 23MRNGE: 1W Is S/T/R in Appendix D? Ye	s No_X
Map of wetland unit: Figure And Estimated s	size

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п шХ іv </u>

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

20
7
12
39

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	X
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	Γ

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the		X
appropriate state or federal database.		<u>}</u>
<ul><li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li><li>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).</li></ul>		$\times$
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.

Wetland name or number <u>A-5</u>

#### Classification of Wetland Units in Western Washington

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

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

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

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

The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
 Groundwater and surface water runoff are NOT sources of water to the unit.
 NO- go to 3
 YES – The wetland class is Flats

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

- 3. Does the entire wetland unit meet both of the following criteria?
  - \_\_\_\_\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
  - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
  - (NO) go to 4 YES The wetland class is Lake-fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
    - The water leaves the wetland without being impounded?
      - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

NO go to 5 YES – The wetland class is Slope

Wetland name or number A-5

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

- \_\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank
  - flooding from that stream or river

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

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

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.

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)	
1150121	improve water quality	(see p.38)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?		
D	D.1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 ( <i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing		
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS		
D	definitions) YES NO points = 4 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	3	
	Map of Cowardin vegetation classes	Figure	
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation. 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.</li> <li>Area seasonally ponded is &gt; ½ total area of wetland Area seasonally ponded is &gt; ¼ total area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area for the area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area for the area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area for the area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area for the area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area for the area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area for the area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area for the area</li></ul>	4	
D		+	
D			
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	20	

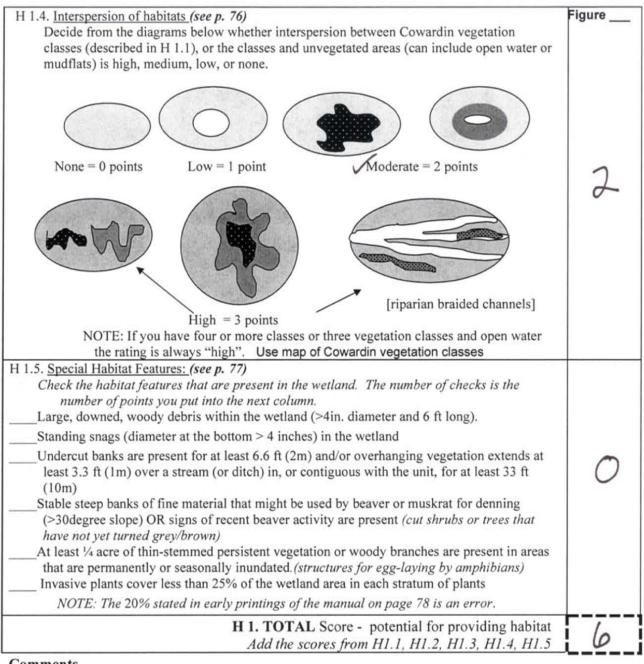
D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)	
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	(see p.46)	
D	D 3-1 Characteristics of surface water flows out of the wetland unit       points = 4         Unit is a depression with no surface water leaving it (no outlet)       points = 4         Unit has an intermittently flowing, OR highly constricted permanently flowing outlet       points = 2         Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and       no obvious natural outlet and/or outlet is a man-made ditch         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"points = 5Marks 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 outletpoints = 3Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap watermarks of ponding less than 0.5 ftpoints = 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 points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 V The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	0	
D	Total for D 3Add the points in the boxes above	T (see p. 49)	
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply.</i>         — 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         </li> </ul>		
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier	
	- Other	1	
	YES multiplier is 2 (NO) multiplier is 1		
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	T	

These questions apply to wetlands of all I ABITAT FUNCTIONS - Indicators that unit fu		habitat	Points (only 1 scor per box)
I 1. Does the wetland unit have the potential t	o provide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if u Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >3	init is smaller than 2.5 acres.	hold for each	Figure
Forested (areas where trees have >30% of If the unit has a forested class check if: The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover 2 Add the number of vegetation structures that qualify	canopy, sub-canopy, shrubs, he 20% within the forested polygo		2
Map of Cowardin vegetation classes	3 structures 2 structures 1 structure	points = 2 points = 1 points = 0	
<ul> <li>11.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods regime has to cover more than 10% of the wetlan descriptions of hydroperiods)</li> <li><u>X</u> Permanently flooded or inundated</li> <li><u>Seasonally flooded or inundated</u></li> <li><u>Seasonally flooded or inundated</u></li> <li><u>Seasonally flooded or inundated</u></li> <li><u>Seasonally flowing stream or river in, or Seasonally flowing stream in, or adjacent</u></li> <li><u>Lake-fringe wetland = 2 points</u></li> </ul>	4 or more types presen 3 types present 2 types present 1 type present r adjacent to, the wetland to, the wetland	for t points = 3 points = 2 point = 1 points = 0	I
Freshwater tidal wetland = 2 points 11.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlan of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canan If you counted: List species below if you want to:	e size threshold)	fferent patches	l
		Total for	4

13

August 2004

Wetland name or number <u>A-5</u>



21 Does the wething unit have the opportunity :	o provide habitat for many species?	
2.1 Buffers (see p. 80)		Figure _
<ul> <li>2.1 <u>Buffers</u> (see p. 80) hoose the description that best represents condition of biterion that applies to the wetland is to be used in the raindisturbed."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the u undisturbed also means no-grazing, no landscapin</li> <li>— 100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>— 100 m (330ft) of relatively undisturbed vegetated circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>— No paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or law</li> <li>— No paved areas or buildings within 50m of wetlat Light to moderate grazing, or lawns are OK.</li> <li>— Heavy grazing in buffer.</li> <li>— Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of w Buffer does not meet any of the criteria above.</li> </ul>	ating. See text for definition of a areas, rocky areas, or open water >95% andisturbed part of buffer. (relatively ng, no daily human use) Points = 5 d areas, rocky areas, or open water > Points = 4 areas, rocky areas, or open water >95% Points = 4 d areas, rocky areas, or open water >25% Points = 3 areas, rocky areas, or open water for > Points = 3 f the criteria above is within 25 m (80ft) of wetland > 95% wns are OK. Points = 2 and for >50% circumference. Points = 1 than 95% of the circumference (e.g. tilled	1
Aeria Example 2.2 Corridors and Connections (see p. 81) H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 150 ft wid or native undisturbed prairie, that connects to estual uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the con- YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 50ft wide, forest, and connects to estuaries, other wetlands or acres in size? OR a Lake-fringe wetland, if it does the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt wate within 5 mi of a large field or pasture (>40 a within 1 mi of a lake greater than 20 acres? YES = 1 point	al photo showing buffers we and unbroken vegetated corridor le, has at least 30% cover of shrubs, forest ries, other wetlands or undisturbed a riparian corridors, heavily used gravel corridor). NO = go to H 2.2.2 we and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 s not have an undisturbed corridor as in NO = H 2.2.3 er estuary OR	1

<ul> <li>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)</li> <li>Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>These are DFW definitions. Check with your local DFW biologist if there are any questions.</li> <li>Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li>Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</li> <li>Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li>Old-growth forests: (Old-growth west of Cascade crest) Stands of a least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</li> <li>Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</li> <li>Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</li> <li>Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</li> <li>Caves: A naturally occurring cavity, recess, void, or system of interconnected passages</li> <li>Oregon white OAk: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak</li></ul>	1
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)	

Wetland name or number <u>A-5</u>

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> </ul>	3
There are no wetlands within $\frac{1}{2}$ mile. There are no wetlands within $\frac{1}{2}$ mile. points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 14	6
<b>Fotal Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	12

WETLAND RATING Version 2 - Updated July 2006 to i	FORM – WESTERN WA	
Name of wetland (if known): Wetland	B	Date of site visit: 6/19/07
Rated by Greg Allington	Trained by Ecology? Yes	s_NoX Date of training
SEC: 32 TWNSHP: 23N RNGE: 1W IS		
Map of wetland unit: Fig	gure <u>App</u> B Estimated	size <u>0,46 a</u> cres

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland I\_\_\_\_II\_\_\_III\_X\_\_IV\_\_\_

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



**TOTAL score for Functions** 

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	Contraction of the second
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	X
Old Growth Forest	Flats	1
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)		NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		$\vee$
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\wedge$
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		Х
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.		$\times$

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

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

## Classification of Wetland Units in Western Washington

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

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

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

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

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

NO go to 3 YES – The wetland class is Flats

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

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

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

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

X The wetland is on a slope (slope can be very gradual).

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

The water leaves the wetland without being impounded?

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

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

5. 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.

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

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

S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)	
S	S 1. Does the wetland unit have the potential to improve water quality?	(see p.64)	
s	S 1.1 Characteristics of average slope of unit: Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft / horizontal distance) points = 3		
	Norizontal distance)points = 3Slope is $1\% - 2\%$ points = 2Slope is $2\% - 5\%$ points = 1Slope is greater than $5\%$ points = 0	2	
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES = 3 points	0	
S	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3</li> <li>V Dense, woody, vegetation &gt; 1/2 of area points = 1 Dense, uncut, herbaceous vegetation &gt; 1/4 of area points = 1 Does not meet any of the criteria above for vegetation polygons</li> </ul>	Figure	
s	Total for S 1Add the points in the boxes above	4	
S	<b>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>	(see p.67)	
	<ul> <li>Grazing in the wetland or within 150ft</li> <li>Untreated stormwater discharges to wetland</li> <li>X Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> </ul>	multiplier	
	YES multiplier is 2 NO multiplier is 1	4	
s	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	8	

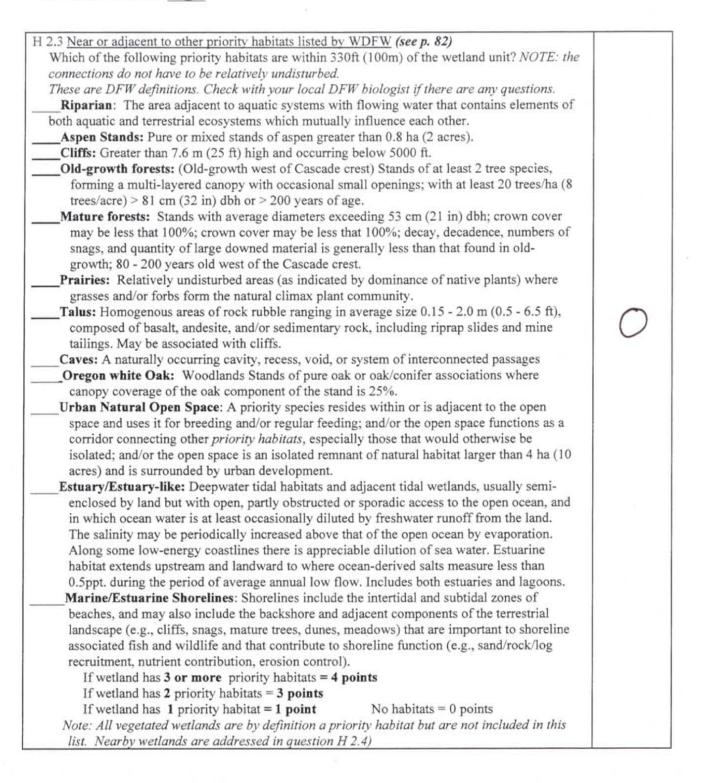
S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion		
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)	
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. points = 6 Dense, uncut, rigid vegetation > 1/2 area of wetland Dense, uncut, rigid vegetation > 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid         points = 0	3	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. NO points = 0		
S	Add the points in the boxes above	5	
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i></li> <li>— Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>		
	Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1	multiplier	
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	10	

These questions apply to wetlands of all HABITAT FUNCTIONS - Indicators that unit f		t habitat	Point (only 1 : per b
H 1. Does the wetland unit have the potential	and the second se	and a second	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as a class is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants	lefined by Cowardin)- Size thres Funit is smaller than 2.5 acres.		Figure
Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strata moss/ground-cover) that each cover	cover) (canopy, sub-canopy, shrubs, he 20% within the forested polygo		2
Add the number of vegetation structures that quality	fy. If you have: 4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
<ul> <li>I 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods regime has to cover more than 10% of the wetla descriptions of hydroperiods)</li> <li>Permanently flooded or inundated</li> <li>Seasonally flooded or inundated</li> <li>Occasionally flooded or inundated</li> <li>Saturated only</li> <li>Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent</li> <li>Lake-fringe wetland = 2 points</li> <li>Freshwater tidal wetland = 2 points</li> </ul>	4 or more types present 3 types present 2 types present 1 type present or adjacent to, the wetland	for t points = 3 points = 2 point = 1 points = 0	Figure _
1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlaw of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed cana If you counted: List species below if you want to:	ne size threshold) rygrass, purple loosestrife, Can		1
	-	Total for p	4

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

H 2. Does the wetland unit have the opportunity to provide habitat for many spec	ies?
<ul> <li>H 2.1 Buffers (see p. 80)</li> <li>Choose the description that best represents condition of buffer of wetland unit. The highest scatteriterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;9 of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 3 0% circumference. Points =</li> <li>50% circumference. Points =</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95 circumference. Points =</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95 circumference. Points =</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95 circumference. Points =</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95 circumference. Points =</li> <li>100 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;2 circumference, . Points =</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for 50% circumference. If buffer does not meet any of the criteria above</li> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt;95% circumference. Light to moderate grazing, or lawns are OK. Points =</li> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points =</li> <li>Heavy grazing in buffer. Points =</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tfields, paving, basalt bedrock extend to edge of wetland Points =</li> <li>Aerial photo showing buffers</li> </ul>	Figure       05%       5       4       5%       4       5%       3       >       3       2       1       illed       0.
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, for or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? ( <i>dams in riparian corridors, heavily used grave roads, paved roads, are considered breaks in the corridor</i> ). VYES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 2 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as if the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR	vel 5
within 1 mi of a lake greater than 20 acres? YES = 1 point NO = 0 points	

Total for page 7



otal Score for Habitat Functions – add the points for H 1, H 2 and record the result on	0
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4 TOTAL for H 1 from page 14	10
<ul> <li>2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile.</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile</li> <li>There are at least 1 wetland within ½ mile.</li> <li>There is at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	3

WETLAND RATING	FORM - WESTERN	WASHINGTON
	전 그는 것 같아요. 것 것 같아요. 전 것은 것이 같아요. 한 것이 것 것 같아.	

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users

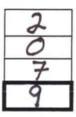
Name of wetland (if known): Wetland C	Date of site visit: 6/19/07
Rated by Greg Allington Trained by Ecology? Yes	No X Date of training
SEC: 32 TWNSHP: 23NRNGE: IW Is S/T/R in Appendix D? Ye	esNoX
Map of wetland unit: Figure App B Estimated	size

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п п тх Х</u>

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** 

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

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

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		$\mathbf{N}$
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		X
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

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

## Classification of Wetland Units in Western Washington

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

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

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

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

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

NO- go to 3 YES – The wetland class is Flats

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

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

\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

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

go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)

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

X 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

NO

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.* 

NOJ 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.

NOJ- go to 8 YES - The wetland class is Depressional

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

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

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

Wetland name or number \_\_\_\_\_

S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit:         Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)         Slope is 1% - 2%       points = 3         Slope is 2% - 5%       points = 1         Slope is greater than 5%       points = 0	
s	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES = 3 points	0
S	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: <i>Choose the points appropriate for the description that best fits the vegetation in the</i> <i>wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75%</i> <i>cover), and uncut means not grazed or mowed and plants are higher than 6 inches.</i> Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3 Dense, woody, vegetation &gt; 1/2 of area points = 1 Dense, uncut, herbaceous vegetation &gt; 1/4 of area points = 1 V Does not meet any of the criteria above for vegetation polygons</li> </ul>	Figure
S	Total for S 1     Add the points in the boxes above	1
S	<b>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>	(see p.67)
	<ul> <li>Grazing in the wetland or within 150ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> <li>WES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier
	TOTAL - Water Quality Functions Multiply the score from S1 by S2	

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. <i>Choose the points appropriate for the description that best fit conditions in the wetland.</i> <i>(stems of plants should be thick enough (usually &gt; 1/8in), or dense enough, to remain</i> <i>erect during surface flows)</i> Dense, uncut, <b>rigid</b> vegetation covers > 90% of the area of the wetland. Dense, uncut, <b>rigid</b> vegetation > 1/2 area of wetland Dense, uncut, <b>rigid</b> vegetation > 1/2 area of wetland Dense, uncut, <b>rigid</b> vegetation > 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid <i>points = 0</i>	0
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	0
S	Add the points in the boxes above	0
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.</li> <li>— Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>	(see p. 70)
	problems — Other	multiplier
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 (NO) multiplier is 1	1
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	0

Comments

August 2004

These questions apply to wetlands of all ABITAT FUNCTIONS - Indicators that unit f		Points (only 1 so per bo
I 1. Does the wetland unit have the potential	to provide habitat for many species?	
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moss/ground-cover) that each cover	(canopy, sub-canopy, shrubs, herbaceous, 20% within the forested polygon	0
Add the number of vegetation structures that quality	$\begin{array}{cccc}  & 4 \text{ structures or more} \\  & 3 \text{ structures} \\  & 2 \text{ structures} \\  & & 1 \text{ structure} \\ \end{array} \qquad \begin{array}{c}  & \text{points} = 4 \\  & \text{points} = 2 \\  & \text{points} = 1 \\  & \text{points} = 0 \\ \end{array}$	
1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiod		Figure
descriptions of hydroperiods)         Permanently flooded or inundated         Seasonally flooded or inundated         Occasionally flooded or inundated         X         Saturated only         Permanently flowing stream or river in, or         Seasonally flowing stream in, or adjacent         Lake-fringe wetland = 2 points         Freshwater tidal wetland = 2 points		0
<ul> <li>1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetla of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed cana If you counted: List species below if you want to:</li> </ul>	he size threshold) arygrass, purple loosestrife, Canadian Thistle	

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

2. Does the wetland unit have the opportunity to prov	vide habitat for many species?	
<ul> <li>2.1 Buffers (see p. 80)</li> <li>Phoose the description that best represents condition of buffer of the description that applies to the wetland is to be used in the rating. Sundisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, of circumference. No structures are within the undistur undisturbed also means no-grazing, no landscaping, no 100 m (330 ft) of relatively undisturbed vegetated areas, 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, scircumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, scircumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, scircumference.</li> <li>If buffer does not meet any of the cr</li> <li>No paved areas (except paved trails) or buildings within circumference. Light to moderate grazing, or lawns are</li> <li>No paved areas or buildings within 50m of wetland for 2 Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95 fields, paving, basalt bedrock extend to edge of wetland Buffer does not meet any of the criteria above.</li> </ul>	f wetland unit. The highest scoring be text for definition of rocky areas, or open water >95% bed part of buffer. (relatively daily human use) Points = 5 rocky areas, or open water > Points = 4 rocky areas, or open water >95% Points = 4 rocky areas, or open water > 25% Points = 3 rocky areas, or open water for > Points = 2 >50% circumference. Points = 1 % of the circumference (e.g. tilled Points = 0. Points = 1	Figure _
<ul> <li>H 2.2 <u>Corridors and Connections</u> (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturbed and (either riparian or upland) that is at least 150 ft wide, has a or native undisturbed prairie, that connects to estuaries, oth uplands that are at least 250 acres in size? (dams in riparia roads, paved roads, are considered breaks in the corridor) YES = 4 points (go to H 2.3)</li> <li>H 2.2.2 Is the wetland part of a relatively undisturbed and (either riparian or upland) that is at least 50ft wide, has at 1 forest, and connects to estuaries, other wetlands or undistuarces in size? OR a Lake-fringe wetland, if it does not hat the question above?</li> <li>YES = 2 points (go to H 2.3)</li> <li>H 2.2.3 Is the wetland:</li> <li>within 5 mi (8km) of a brackish or salt water estuar within 3 mi of a large field or pasture (&gt;40 acres) O within 4 mi of a lake greater than 20 acres?</li> </ul>	t least 30% cover of shrubs, forest her wetlands or undisturbed an corridors, heavily used gravel NO = go to H 2.2.2 unbroken vegetated corridor east 30% cover of shrubs or rbed uplands that are at least 25 ve an undisturbed corridor as in NO = H 2.2.3 y OR	]

<ul> <li>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82)</li> <li>Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>These are DFW definitions. Check with your local DFW biologist if there are any questions.</li> <li><b>Riparian</b>: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li><b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</li> <li><b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li><b>Old-growth forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</li> <li><b>Mature forests:</b> Stands with average diameters exceeding 53 cm (21 in) dbh; 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.</li> </ul>	
tailings. May be associated with cliffs. <b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages	$\bigcirc$
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other <i>priority habitats</i> , especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development	
acres) and is surrounded by urban development. Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point 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)	

WETLAND RATING FORM – WESTER Version 2 - Updated July 2006 to increase accuracy and re	
Name of wetland (if known): Wetland D	Date of site visit: <b>5/20/07</b>
Rated by Greg Allington Trained by Ecology	y? Yes_NoX Date of training
SEC: 32 TWNSHP: 23NRNGE: 1W Is S/T/R in Appendix	
Map of wetland unit: Figure App B Estir	

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п ш гу</u>Х

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** 

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply\_X

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



Summary of basic information about the wetland unit

Vetland Unit has Special Wetland HGM Class Characteristics used for Rating		State B
Estuarine	Depressional	X
Natural Heritage Wetland	Riverine	1
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	Γ

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		$\sim$
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 <b>animal</b> 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).		$\times$
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		$\times$

# <u>To complete the next part of the data sheet you will need to determine the</u> <u>Hydrogeomorphic Class of the wetland being rated.</u>

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

# Classification of Wetland Units in Western Washington

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

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

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

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

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

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

NO/- go to 3 YES – The wetland class is Flats

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

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

\_\_\_\_\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

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

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

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

\_\_\_\_\_The wetland is on a slope (slope can be very gradual),

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

The water leaves the wetland without being impounded?

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

go to 5 YES - The wetland class is Slope

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

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

flooding from that stream or river

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

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

(NO) go to 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.

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)	
	improve water quality		
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?		
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       points = 1         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")	Figure	
	Provide photo or drawing		
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0	
		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 = 0Map of Cowardin vegetation classes	3	
	D1.4 Characteristics of seasonal ponding or inundation.	Figure	
D	This is the area of the wetland unit that is ponded for at least 2 months, but dries outsometime during the year. Do not count the area that is permanently ponded. Estimatearea as the average condition 5 out of 10 yrs.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 = 0Map of Hydroperiods	2	
D	Total for D 1       Add the points in the boxes above	7	
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields or orchards within 150 ft of wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li></ul>	(see p. 44) multiplier	
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2	111	
	Add score to table on p. 1	14	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 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	2
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 outletpoints = 7The wetland is a "headwater" wetland"points = 5Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	5
D	<ul> <li>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.</li> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> </ul>	(see p. 49)
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier
	- Other	1
D	YES multiplier is 2 NO multiplier is 1 TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	
D	Add score to table on p. 1	

These questions apply to wetlands of all HABITAT FUNCTIONS - Indicators that unit fu		habitat	Points (only 1 scr per box
H 1. Does the wetland unit have the potential	to provide habitat for many	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30%)	unit is smaller than 2.5 acres. 30% cover)	hold for each	Figure
If the unit has a forested class check if: The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover Add the number of vegetation structures that quality	(canopy, sub-canopy, shrubs, he 20% within the forested polygo		١
Map of Cowardin vegetation classes	3 structures 2 structures 1 structure	points = 2 points = 1 points = 0	
H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiod) regime has to cover more than 10% of the wetland descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, o Seasonally flowing stream in, or adjacent	4 or more types present 3 types present 2 types present 1 type present r adjacent to, the wetland	for	Figure
Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	Map of hydr	operiods	
1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlar of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed canan If you counted: List species below if you want to:	e size threshold)		I

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

12.1 Buffers (see p. 80)       Figure	2. Does the wetland unit have the opportunity to provide habitat f	for many species?	
<ul> <li>Vegetated buffers are &lt;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</li> <li>Aerial photo showing buffers</li> <li>H 2.2 Corridors and Connections (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2</li> <li>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?</li> <li>YES = 2 points (go to H 2.3) NO = H 2.2.3</li> <li>H 2.2.3 Is the wetland:</li> <li>within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (&gt;40 acres) OR</li> </ul>	<ul> <li>2.1 <u>Buffers</u> (see p. 80) hoose the description that best represents condition of buffer of wetland unit. riterion that applies to the wetland is to be used in the rating. See text for defi- undisturbed."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or of circumference. No structures are within the undisturbed part of buf- undisturbed also means no-grazing, no landscaping, no daily human us</li> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or circumference.</li> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or circumference, .</li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or circumference, .</li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or s0% circumference.</li> <li>— No paved areas (except paved trails) or buildings within 25 m (80ft) of circumference. Light to moderate grazing, or lawns are OK.</li> <li>— No paved areas or buildings within 50m of wetland for &gt;50% circumfer Light to moderate grazing, or lawns are OK.</li> </ul>	The highest scoring inition of r open water >95% ffer. (relatively se) Points = 5 or open water > Points = 4 open water >95% Points = 4 r open water > 25% Points = 3 open water for > Points = 3 f wetland > 95% Points = 2 f wetland > 95% Points = 2	Figure
	Light to moderate grazing, or lawns are OK. — Heavy grazing in buffer. — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circum fields, paving, basalt bedrock extend to edge of wetland Buffer does not meet any of the criteria above. Aerial photo showing buffer H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vege (either riparian or upland) that is at least 150 ft wide, has at least 30% cov or native undisturbed prairie, that connects to estuaries, other wetlands or uplands that are at least 250 acres in size? (dams in riparian corridors, h roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vege (either riparian or upland) that is at least 50ft wide, has at least 30% cove forest, and connects to estuaries, other wetlands or undisturbed uplands th acres in size? OR a Lake-fringe wetland, if it does not have an undisturb the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR	Points = 2 Points = 1 mference (e.g. tilled Points = 0. Points = 1 ers tated corridor ver of shrubs, forest undisturbed teavily used gravel 2.2.2 tated corridor r of shrubs or hat are at least 25	1

Total for page 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) $> 81$ cm (32 in) dbh or $> 200$ years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	$\sim$
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	()
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point 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)	

	M – WESTERN WASHINGTON e accuracy and reproducibility among users
Name of wetland (if known): Wetland	Date of site visit: 6/21/07
Rated by Greg Allington Train	ned by Ecology? Yes_NoX Date of training
SEC: 32 TWNSHP: 23NRNGE: 1W Is S/T/	
Map of wetland unit: Figure	400B Estimated size . 4 acres
	Y OF RATING
Category based on FUNCTIONS provid	led by wetland
<u>і                                    </u>	
Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Score for Water Quality Functions 8 Score for Hydrologic Functions 2 Score for Habitat Functions 9 TOTAL score for Functions 19
Category based on SPECIAL CHARAC	TERISTICS of wetland
Final Category (choose the "	tion about the wetland unit
Wetland Unit has Special	Wetland HGM Class
Characteristics	used for Rating
Estuarine Natural Heritage Wetland	Depressional X Riverine

Bog

Mature Forest

**Coastal Lagoon** 

None of the above

Interdunal

**Old Growth Forest** 

1

Lake-fringe

Freshwater Tidal

Check if unit has multiple HGM classes present

Slope

Flats

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		$\vee$
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$^{\times}$
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		$\times$
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.

## Classification of Wetland Units in Western Washington

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

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

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

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

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

NO  $\frac{1}{2}$  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)?

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

NO

3

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.

NO2 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  $\overline{\text{YES}}$  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 nataral outlet.

NOL go to 8 YES - The wetland class is Depressional .

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

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 Map of Cowardin vegetation classes	Figure
D	D1.4 Characteristics of seasonal ponding or inundation.         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.         Area seasonally ponded is > ½ total area of wetland       points = 4         Area seasonally ponded is > ¼ total area of wetland       points = 2         Area seasonally ponded is < ¼ total area of wetland       points = 0	Figure
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	4
D	<ul> <li>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. — Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland</li> </ul>	
4	Wetland is fed by groundwater high in phosphorus or nitrogen     Other     multiplier is 2 NO multiplier is 1	multiplier
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	8

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 0	2
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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	2
D	<ul> <li>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.         <ul> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> <li>— Wetland has no outlet and impounds surface runoff water that might otherwise</li> </ul> </li> </ul>	(see p. 49)
	flow into a river or stream that has flooding problems — Other	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	2

These questions apply to wetlands of all A ABITAT FUNCTIONS - Indicators that unit fu		t habitat	Points (only 1 ser per box
I 1. Does the wetland unit have the potential		Construction of Half of Long	
1.1 Vegetation structure (see p. 72)	to provide nabitat for man	species.	Figure
Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if a Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >3 Forested (areas where trees have >30% of	unit is smaller than 2.5 acres. 30% cover)	hold for each	
If the unit has a forested class check if:			
The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover 2	20% within the forested polygo		0
Add the number of vegetation structures that qualif			
	4 structures or more	points = 4	
Map of Cowardin vegetation classes	3 structures	points = 2	
	2 structures	points $= 1$	
1.2. Hydroperiods (see p. 73)	✓1 structure	points = 0	Figure
descriptions of hydroperiods)  Permanently flooded or inundated Seasonally flooded or inundated  Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freehwater tidal wetland = 2 points	to, the wetland	points = 2 point = 1 points = 0	Ţ
Freshwater tidal wetland = 2 points	Map of hydr	operioas	
<ul> <li>1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlan of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canar If you counted: List species below if you want to:</li> </ul>	e size threshold)		1
		Total for p	age 2

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

H 2. Does the wetland unit have the opportunity	to provide habitat for many species?	1115
H 2.1 Buffers (see p. 80)		Figure
Choose the description that best represents condition of	buffer of wetland unit. The highest scoring	
riterion that applies to the wetland is to be used in the	rating. See text for definition of	
'undisturbed."		
<ul> <li>— 100 m (330ft) of relatively undisturbed vegetate</li> </ul>	ed 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 landscap	ping, no daily human use) $Points = 5$	
- 100 m (330 ft) of relatively undisturbed vegetate	ed areas, rocky areas, or open water >	
50% circumference.	Points = 4	
- 50 m (170ft) of relatively undisturbed vegetated	d areas, rocky areas, or open water >95%	
circumference.	Points = 4	1
- 100 m (330ft) of relatively undisturbed vegetate	d areas, rocky areas, or open water > 25%	
circumference, .	Points = 3	
- 50 m (170ft) of relatively undisturbed vegetated	d areas, rocky areas, or open water for >	
50% circumference.	Points = 3	
If buffer does not meet any o	of the criteria above	
- No paved areas (except paved trails) or building	s within 25 m (80ft) of wetland > 95%	
circumference. Light to moderate grazing, or la	wns are OK. <b>Points = 2</b>	
- No paved areas or buildings within 50m of wetla	and for >50% circumference.	
Light to moderate grazing, or lawns are OK.	Points = 2	
<ul> <li>Heavy grazing in buffer.</li> </ul>	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	
	ial photo showing buffers	
H 2.2 Corridors and Connections (see p. 81)		
H 2.2.1 Is the wetland part of a relatively undisturb		
(either riparian or upland) that is at least 150 ft wid		
or native undisturbed prairie, that connects to estua		
uplands that are at least 250 acres in size? (dams i	n riparian corridors, heavily used gravel	
roads, paved roads, are considered breaks in the c	1991 CARANTELE MARKET AND A CARANTELE CARANTELE CARANTELE CARANTELE CARANTELE CARANTELE CARANTELE CARANTELE CA	
YES = 4  points (go to H 2.3)	NO = go to H 2.2.2	1
H 2.2.2 Is the wetland part of a relatively undisturb	bed 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		
acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it doe the question above?	is not have an undisturbed corridor as in	
YES = 2  points  (go  to  H 2.3)	NO - U 2 2 2	
H 2.2.3 Is the wetland: $(go to H 2.3)$	NO = H 2.2.3	
within 5 mi (8km) of a brackish or salt wate	r estuary OP	
within 3 mi of a large field or pasture (>40 a		
within the	acres) OR	
$(YES \neq 1 \text{ point})$	NO = 0 points	
	rio o pomo	

Total for page 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
<b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; 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.	
<b>Prairies:</b> Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs. Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	1
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	1
canopy coverage of the oak component of the stand is 25%.	·
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other <i>priority habitats</i> , especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
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)	

Total Score for Habitat Functions – add the points for H 1, H 2 and record the res	ion 9
H 2. TOTAL Score - opportunity for providing H Add the scores from H2.1,H2.2, H2.3 TOTAL for H 1 from pa	2.4 0
<ul> <li>2.4 Wetland Landscape (choose the one description of the landscape around the wetland best fits) (see p. 84)</li> <li>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 som boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fri wetlands within ½ mile</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them a disturbed</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile.</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe point.</li> <li>There are at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	<sup>5</sup> <sup>5</sup> <sup>3</sup> <sup>3</sup> <sup>2</sup>

WETLAND RATING FORM - WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Name of wetland (if known): Wetland F Date of site visit: 6/21/07-Rated by Greg Allington Trained by Ecology? Yes\_No X Date of training SEC: 32 TWNSHP: 23NRNGE: W Is S/T/R in Appendix D? Yes No X Map of wetland unit: Figure App B Estimated size 0.05 acres SUMMARY OF RATING Category based on FUNCTIONS provided by wetland <u>и\_ п\_ п\_ гу</u>Х Score for Water Quality Functions 10 Category I = Score  $\geq =70$ 4 Score for Hydrologic Functions Category II = Score 51-69 Category III = Score 30-50 Score for Habitat Functions Category IV = Score < 30**TOTAL score for Functions** Category based on SPECIAL CHARACTERISTICS of wetland I\_\_\_ II\_\_\_ Does not Apply X Final Category (choose the "highest" category from above) Summary of basic information about the wetland unit Wetland Unit has Special Wetland HGM Class Characteristics used for Rating 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

Wetland name or number

1

HGM classes present

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		$\mathbf{N}$
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		X
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.

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# Classification of Wetland Units in Western Washington

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

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

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

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

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

NO- go to 3 **YES** – The wetland class is **Flats** 

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

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

Of go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)

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

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

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

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

5. 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.* 

(NQ)- 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.

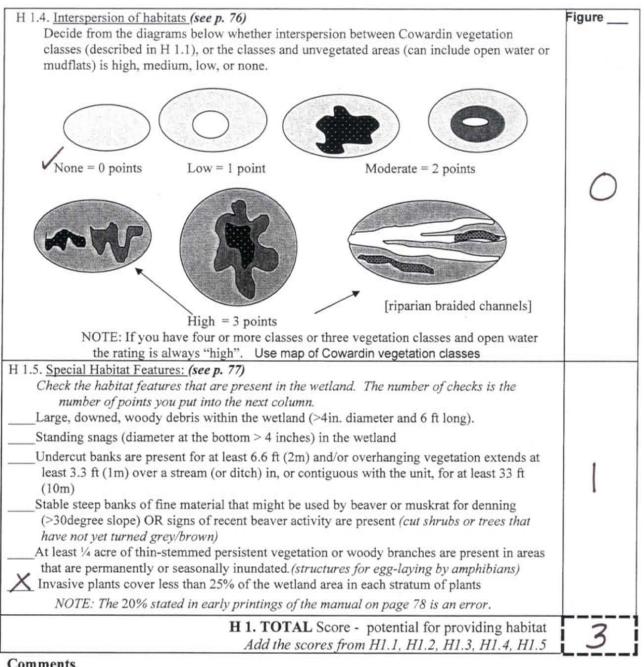
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)	
D	D1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing		
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure	
D	D1.4 Characteristics of seasonal ponding or inundation.This is the area of the wetland unit that is ponded for at least 2 months, but dries outsometime during the year. Do not count the area that is permanently ponded. Estimatearea as the average condition 5 out of 10 yrs.Area seasonally ponded is > ½ total area of wetlandPoints = 4Area seasonally ponded is > ¼ total area of wetlandpoints = 2Area seasonally ponded is < ¼ total area of wetlandpoints = 0	Figure	
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	5	
D	D 2. Does the wetland unit have the opportunity to improve water quality?       (see p. 4)         Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.       (see p. 4)         — Grazing in the wetland or within 150 ft       Intreated stormwater discharges to wetland       Intreated stormwater discharges to wetland         — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging       multiplie         — Wetland is fed by groundwater high in phosphorus or nitrogen       Other       2		
D	YES       multiplier is 2       NO       multiplier is 1         TOTAL - Water Quality Functions       Multiply the score from D1 by D2         Add score to table on p. 1	10	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)	
	D 3. Does the wetland unit have the potential 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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3. 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	0	
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0	
D	Total for D 3Add the points in the boxes above	4	
D	<ul> <li>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.</li> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> </ul>		
	<ul> <li>Wetland drains to a river or stream that has flooding problems</li> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> <li>Other</li> </ul>	multiplier	
-	YES multiplier is 2 NO multiplier is 1		
D	<b>TOTAL</b> - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	4	

portant habitat	Points (only 1 score per box)
r many species?	
ze threshold for each acres.	Figure
rubs, herbaceous,	
polygon	
nore points = 4	
points = 2	
points = 1	
points = 0	Figure
spresent points = 3 present points = 2 present point = 1 present points = 0 nd point = 0	l
e	es points = 2 ies points = 1



#### Comments

		-
	-	~
	- T.	-
	~	-
Care: 1	7	

H 2. Does the wetland unit have the opportu	ride habitat for many species?
H 2.1 Buffers (see p. 80)	Figure _
Choose the description that best represents condition criterion that applies to the wetland is to be used in "undisturbed."	f wetland unit. The highest scoring see text for definition of
<ul> <li>— 100 m (330ft) of relatively undisturbed veg of circumference. No structures are within undisturbed also means no-grazing, no land</li> <li>— 100 m (330 ft) of relatively undisturbed vege 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vege circumference.</li> <li>— 100 m (330ft) of relatively undisturbed vege circumference, .</li> <li>— 100 m (330ft) of relatively undisturbed vege circumference, .</li> <li>— 50 m (170ft) of relatively undisturbed vege 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vege 50% circumference.</li> <li>— No paved areas (except paved trails) or buil circumference. Light to moderate grazing,</li> <li>— No paved areas or buildings within 50m of Light to moderate grazing, or lawns are OK</li> <li>— Heavy grazing in buffer.</li> <li>— Vegetated buffers are &lt;2m wide (6.6ft) for the state of the s</li></ul>	bed part of buffer. (relatively haily human use) Points = 5 rocky areas, or open water > Points = 4 rocky areas, or open water >95% Points = 4 rocky areas, or open water > 25% Points = 3 ocky areas, or open water for > Points = 3 iteria above 25  m (80ft) of wetland > 95% OK. Points = 2 50%  circumference. Points = 1
Buffer does not meet any of the criteria abo	Points = 1 showing buffers
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undit (either riparian or upland) that is at least 150 f or native undisturbed prairie, that connects to uplands that are at least 250 acres in size? (da roads, paved roads, are considered breaks in YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undit (either riparian or upland) that is at least 50 ft forest, and connects to estuaries, other wetland acres in size? OR a Lake-fringe wetland, if it the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt within 3 mi of a large field or pasture (f within 1 mi of a lake greater than 20 ac	unbroken vegetated corridor t least 30% cover of shrubs, forest er wetlands or undisturbed <i>m corridors, heavily used gravel</i> NO = go to H 2.2.2 unbroken vegetated corridor east 30% cover of shrubs or bed uplands that are at least 25 we an undisturbed corridor as in NO = H 2.2.3 V OR
(YES)= 1 point	NO = 0 points

Total for page\_\_\_\_

August 2004

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE:	the
connections do not have to be relatively undisturbed.	4555
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements	of
both aquatic and terrestrial ecosystems which mutually influence each other.	1
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	1991
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha	(8
trees/acre) $> 81$ cm (32 in) dbh or $> 200$ years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	r
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.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft).	,
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	1
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as	a
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (	10
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	nd
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons	s.
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shorelin	ne
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If we than $1$ priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in thi	s
list. Nearby wetlands are addressed in question H 2.4)	

otal Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	9
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4 TOTAL for H 1 from page 14	6
<ul> <li>2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>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 is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe moints = 3</li> <li>The wetland within ½ mile.</li> <li>There is at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	3

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland G Date of site visit: 6/21/07
Rated by Greg Allington Trained by Ecology? Yes_No X Date of training
SEC: 32 TWNSHP: 23NRNGE: W Is S/T/R in Appendix D? Yes No X
Map of wetland unit: Figure AppB Estimated size 0.09 acres
SUMMARY OF RATING
Category based on FUNCTIONS provided by wetland
<u>і п ш тv Х</u>
Score for Water Quality Functions

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

10	
4	
9	
23	

**TOTAL score for Functions** 

# Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply\_X

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



# Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	Contraction of the local distance of the loc
Estuarine	Depressional	X
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	

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		$\vee$
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul><li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li><li>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).</li></ul>		X
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.

2

## Classification of Wetland Units in Western Washington

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

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

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

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

- 2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
  - NO-go to 3 YES The wetland class is Flats

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

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

3

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.

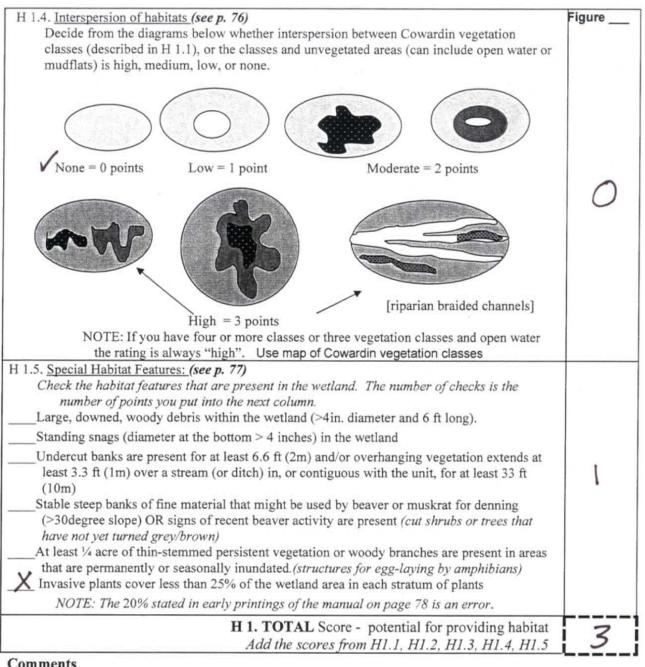
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
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Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)	
D	D.Y.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure	
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS		
D	definitions) YES points = 4 NO points = 0	0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0	Figure	
D	Map of Cowardin vegetation classes         D1.4 Characteristics of seasonal ponding or inundation.         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.         Area seasonally ponded is > ½ total area of wetland       points = 4		
	Area seasonally ponded is $> \frac{1}{4}$ total area of wetland Area seasonally ponded is $< \frac{1}{4}$ total area of wetland Map of Hydroperiods		
D	Total for D 1Add the points in the boxes above	5	
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li> </ul>	(see p. 44) multiplier	
D	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 . 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	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply</i>. — 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</li> </ul>	
	- Other 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	4

These questions apply to wetlands of all H ABITAT FUNCTIONS - Indicators that unit fun	the second se	habitat	Points (only 1 see per box
H 1. Does the wetland unit have the <u>potential</u> to	provide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as defined class is ¼ acre or more than 10% of the area if un Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >30 Forested (areas where trees have >30% co	it is smaller than 2.5 acres. % cover)	oold for each	Figure
If the unit has a forested class check if: The forested class has 3 out of 5 strata (ca moss/ground-cover) that each cover 20	% within the forested polygor		0
Add the number of vegetation structures that qualify. Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
I 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) regime has to cover more than 10% of the wetland descriptions of hydroperiods) Permanently flooded or inundated	present within the wetland. T or ¼ acre to count. (see text j 4 or more types present	for	Figure
Seasonally flooded or inundated Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, or a Seasonally flowing stream in, or adjacent to Lake-fringe wetland = 2 points	3 types present 2 types present 1 type present djacent to, the wetland , the wetland	points = 2 point = 1 points = 0	Ι
Freshwater tidal wetland = 2 points 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland of the same species can be combined to meet the s You do not have to name the species. Do not include Eurasian Milfoil, reed canaryg If you counted: List species below if you want to:	tize threshold) grass, purple loosestrife, Can > 19 species √5 - 19 species	ferent patches	1



#### Comments

2. Does the wetland unit have the opportunity	to provide habitat for many species?	
2.1 Buffers (see p. 80)		Figure _
<ul> <li>hoose the description that best represents condition of iterion that applies to the wetland is to be used in the randisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the u undisturbed also means no-grazing, no landscapi</li> <li>100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>No paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or law are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of w Buffer does not meet any of the criteria above.</li> </ul>	The areas, rocky areas, or open water $>95\%$ and areas, rocky areas, or open water $>95\%$ and isturbed part of buffer. (relatively ing, no daily human use) <b>Points = 5</b> d areas, rocky areas, or open water $>$ <b>Points = 4</b> areas, rocky areas, or open water $>95\%$ <b>Points = 4</b> d areas, rocky areas, or open water $>25\%$ <b>Points = 3</b> areas, rocky areas, or open water for $>$ <b>Points = 3</b> f the criteria above is within 25 m (80ft) of wetland $>95\%$ within 25 m (80ft) of wetland $>95\%$ within 25 m (80ft) of wetland $>95\%$ within 25 m (80ft) of metland $>95\%$ within 25 m (80ft) of metland $>95\%$ is within 25 m (80ft) of metland $>95\%$ and for $>50\%$ circumference. <b>Points = 1</b> than 95% of the circumference (e.g. tilled	]
<ul> <li>H 2.2 <u>Corridors and Connections</u> (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 150 ft wide or native undisturbed prairie, that connects to estual uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the converse of the extension of t</li></ul>	ed and unbroken vegetated corridor e, has at least 30% cover of shrubs, forest ries, other wetlands or undisturbed a riparian corridors, heavily used gravel prridor). NO = go to H 2.2.2 ed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 s not have an undisturbed corridor as in NO = H 2.2.3 r estuary OR	1

Total for page 🖌

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	1
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	•
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
<b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If we land 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)	

16

	RM – WESTERN WASHINGTON ase accuracy and reproducibility among users
Name of wetland (if known): Wetland	Date of site visit: <u><b>6</b></u> / <u>2</u> ]/07
Rated by Greg Allington Tra	ained by Ecology? Yes_NoX Date of training
SEC: 32 TWNSHP: 23N RNGE: 1W IS ST	
Map of wetland unit: Figure	AppB Estimated size <u>0.02</u> acres
SUMMAR	RY OF RATING
Category based on FUNCTIONS prov	ided by wetland
<u>і п п тх</u>	
	Score for Water Quality Functions
Category I = Score $\geq =70$	Score for Hydrologic Functions
Category II = Score 51-69 Category III = Score 30-50	
Category IV = Score $< 30$	Score for Habitat Functions
	TOTAL score for Functions 23
Category based on SPECIAL CHARA	CTERISTICS of wetland
I II Does not Apply_X	
Final Category (choose the	"highest" category from above)
Summary of basic inform	nation about the wetland unit
Wetland Unit has Special	Wetland HGM Class
Characteristics	used for Rating
Estuarine	Depressional X
Natural Heritage Wetland	Riverine
Bog	Lake-fringe
Mature Forest	Slope

Wetland Rating Form – western Washington version 2

**Old Growth Forest** 

**Coastal Lagoon** 

None of the above

Interdunal

Flats

Freshwater Tidal

Check if unit has multiple HGM classes present

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		X
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

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

#### Classification of Wetland Units in Western Washington

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

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

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

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

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

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

NQ- 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 J 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).

go to 5 YES – The wetland class is Slope

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

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

flooding from that stream or river

The overbank flooding occurs at least once every two years.

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

NO- go to 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.

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation.</li> <li>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.</li> <li>Area seasonally ponded is &gt; ½ total area of wetland points = 4</li> <li>Area seasonally ponded is &lt; ¼ total area of wetland points = 0</li> </ul>	Figure
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	5
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> </ul>	
	<ul> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 trapwaterWarks of ponding less than 0.5 ftMarks of ponding less than 0.5 ft	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply</i>.</li> <li>Wetland is in a headwater of a river or stream that has flooding problems</li> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> <li>Other</li> </ul>	(see p. 49) multiplier
	YES multiplier is 2 NO multiplier is 1	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	4

These questions apply to wetlands of all IABITAT FUNCTIONS - Indicators that unit	functions to provide importan	nt habitat	(only 1 s per be
I 1. Does the wetland unit have the potential	l to provide habitat for man	y species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as a class is ¼ acre or more than 10% of the area i Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >30%) Forested (areas where trees have >30%)	f unit is smaller than 2.5 acres. >30% cover)	shold for each	Figure _
If the unit has a forested class check if: The forested class has 3 out of 5 strata	(capony sub-capony shrubs h	arbacaous	1
moss/ground-cover) that each cover			
Add the number of vegetation structures that qual			
	4 structures or more	points = 4	
Map of Cowardin vegetation classes	3 structures	points = 2	
1	2 structures	points = 1	
	V 1 structure	points = 0	
1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperio			Figure _
descriptions of hydroperiods)Permanently flooded or inundated	and or ¼ acre to count. (see text 4 or more types presen	nt points = 3	
<i>descriptions of hydroperiods)</i> Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, Seasonally flowing stream in, or adjacen Lake-fringe wetland = 2 points	4 or more types present 3 types present 2 types present 1 type present or adjacent to, the wetland int to, the wetland	t points = 3 points = 2 point = 1 points = 0	1
descriptions of hydroperiods)         Permanently flooded or inundated         Seasonally flooded or inundated         Occasionally flooded or inundated         Saturated only         Permanently flowing stream or river in,         Seasonally flowing stream in, or adjacen         Lake-fringe wetland = 2 points         Freshwater tidal wetland = 2 points	4 or more types present 3 types present 2 types present 1 type present or adjacent to, the wetland	t points = 3 points = 2 point = 1 points = 0	1
descriptions of hydroperiods)          Permanently flooded or inundated         Seasonally flooded or inundated         Occasionally flooded or inundated         Saturated only         Permanently flowing stream or river in,         Seasonally flowing stream in, or adjacen         Lake-fringe wetland = 2 points	4 or more types present 3 types present 2 types present 1 type present or adjacent to, the wetland Map of hyd and that cover at least 10 ft <sup>2</sup> . ( <i>dij</i> <i>the size threshold</i> ) arygrass, purple loosestrife, Ca	nt points = 3 points = 2 point = 1 points = 0	)

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

#### Comments

2. Does the wetland unit have the opportunity to provide habitat for many specie	s?
2.1 Buffers (see p. 80)	Figure _
<ul> <li>hoose the description that best represents condition of buffer of wetland unit. The highest scorifiterion that applies to the wetland is to be used in the rating. See text for definition of undisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;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</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> <li>M fbuffer does not meet any of the criteria above</li> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt;95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>No paved areas or buildings within 50 m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 1</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. till folds, paving, basalt bedrock extend to edge of wetland Points = 0</li> <li>Buffer does not meet any of the criteria above. Points = 1</li> </ul>	2% % ed
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, fore 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 grave roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? NO = 0 points	

Total for page 👉

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	1
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	1
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
If we land has 2 priority habitats = 3 points	
If we than $1 = 1$ priority habitats = 3 points 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)	
inst. metrol by weithings are undressed in question II 2.4)	

16

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe methand is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe methand within ½ mile points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> </ul>	3	
There are no wetlands within $\frac{1}{2}$ mile. points = 0		
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6	
TOTAL for H 1 from page 14	3	
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	9	

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland I Date of site visit: 6/21/07-
Rated by Greg Allington Trained by Ecology? Yes_No X Date of training
SEC: 32 TWNSHP: 23N RNGE: $M$ Is S/T/R in Appendix D? Yes No X
Map of wetland unit: Figure App B Estimated size 0.04 acres

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>и\_ п\_ п\_ гу</u>

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

10	
4	
9	
23	

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	X
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	

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		Х
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.		Х

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

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

1.1

2

### Classification of Wetland Units in Western Washington

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

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

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

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

- 2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
  - NO- go to 3 YES The wetland class is Flats

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

- 3. Does the entire wetland unit meet both of the following criteria?
  - \_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
  - (NO) go to 4 YES The wetland class is Lake-fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - \_\_\_\_\_The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - The water leaves the wetland without being impounded?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

NO go to 5 YES – The wetland class is Slope

3

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

YES- The wetland class is Depressional NO - go to 7

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

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

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

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

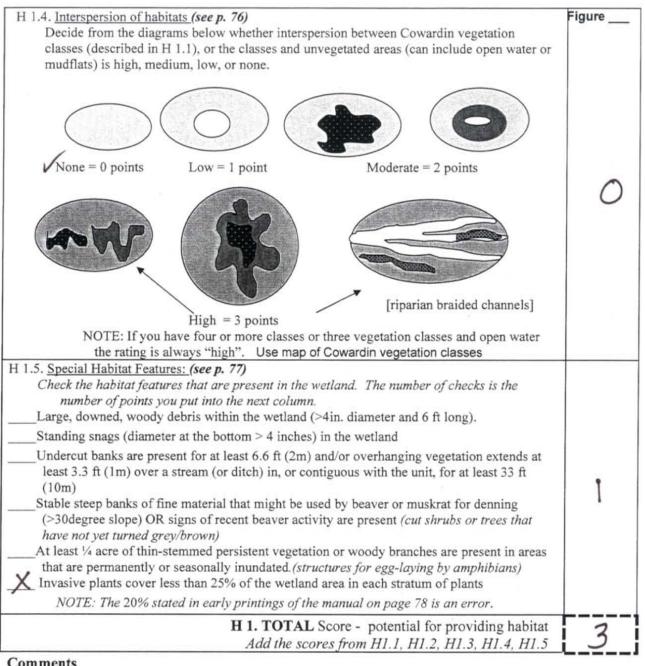
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as Depressional for the rating.

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?		
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing		
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure	
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation.</li> <li>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.</li> <li>Area seasonally ponded is &gt; ½ total area of wetland points = 4</li> <li>Area seasonally ponded is &gt; ¼ total area of wetland points = 2</li> </ul>	Figure	
D	Area seasonally ponded is < 1/4 total area of wetland	6	
D	1	<b>9</b> (see p. 44)	
D	<ul> <li>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. — Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland</li> </ul>		
	<ul> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier	
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	(see p.46)
D	D3-1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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	0
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	4
D	<ul> <li>D 4. Does the wetland unit have the opportunity 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.         <ul> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> <li>— Wetland has no outlet and impounds surface runoff water that might otherwise</li> </ul> </li> </ul>	
	flow into a river or stream that has flooding problems	multiplier
	- Other 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	4

Wetland name or number

1. Does the wetland unit have the potential	to provide habitat for mar	v species?	1.5.18
1.1 Vegetation structure (see p. 72)	to provide nabitat for man	ly species:	Figure
Check the types of vegetation classes present (as d class is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants Forested (areas where shrubs have > Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strata	<i>unit is smaller than 2.5 acres.</i> 30% cover) cover)		
moss/ground-cover) that each cover			
Add the number of vegetation structures that quali			
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures	points = 4 points = 2 points = 1	
1.2. Hydroperiods (see p. 73)	V1 structure	points = 0	Figure _
descriptions of hydroperiods)         Permanently flooded or inundated         Seasonally flooded or inundated         Occasionally flooded or inundated         Saturated only         Permanently flowing stream or river in, or         Seasonally flowing stream in, or adjacent         Lake-fringe wetland = 2 points		t points = 2 t point = 1	Ţ
Freshwater tidal wetland = 2 points	Map of hy	droperiods	
1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlat of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed cana If you counted: List species below if you want to:	ne size threshold) rygrass, purple loosestrife, C		l
			2 9



#### Comments

H 2. Does the wetland unit have the opportunity t	o provide habitat for many species?	1.11.28
H 2.1 Buffers (see p. 80)		Figure
Choose the description that best represents condition of l criterion that applies to the wetland is to be used in the re "undisturbed."		
<ul> <li>100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the u undisturbed also means no-grazing, no landscapin</li> <li>100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>Mo paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or law</li> <li>No paved areas or buildings within 50m of wetlat Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of w Buffer does not meet any of the criteria above. Aeria</li> </ul>	ndisturbed part of buffer. (relatively ng, no daily human use) Points = 5 d areas, rocky areas, or open water > Points = 4 areas, rocky areas, or open water >95% Points = 4 areas, rocky areas, or open water > 25% Points = 3 areas, rocky areas, or open water for > Points = 3 f the criteria above within 25 m (80ft) of wetland > 95% ons are OK. Points = 2 nd for >50% circumference. Points = 1 than 95% of the circumference (e.g. tilled	1
<ul> <li>H 2.2 <u>Corridors and Connections</u> (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturbed (either riparian or upland) that is at least 150 ft wide or native undisturbed prairie, that connects to estuar uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the conyrest = 4 points (go to H 2.3)</li> <li>H 2.2.2 Is the wetland part of a relatively undisturbed (either riparian or upland) that is at least 50ft wide, forest, and connects to estuaries, other wetlands or u acres in size? OR a Lake-fringe wetland, if it does the question above?</li> <li>YES = 2 points (go to H 2.3)</li> <li>H 2.2.3 Is the wetland:</li> <li>within 5 mi (8km) of a brackish or salt water within 3 mi of a large field or pasture (&gt;40 acres)?</li> </ul>	e, has at least 30% cover of shrubs, forest ies, other wetlands or undisturbed <i>riparian corridors, heavily used gravel</i> <i>rridor</i> ). NO = go to H 2.2.2 ed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 not have an undisturbed corridor as in NO = H 2.2.3 estuary OR	]
MES ≠ 1 point	NO = 0 points	
1 Log 1 point	NO = 0 points	

Total for page 7

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	6
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
<b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	,
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	+
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other <i>priority habitats</i> , especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
If wetland has 2 priority habitats = 3 points	
If we than the <b>1</b> priority habitat = <b>1</b> 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)	

WETLAND RATING FORM – WESTERN Version 2 - Updated July 2006 to increase accuracy and repro	
Name of wetland (if known): Wetland J	Date of site visit: 6/21/07-
Rated by Greg Allington Trained by Ecology?	
SEC: 32 TWNSHP: 23N RNGE: 1W Is S/T/R in Appendix D	? Yes No_X
Map of wetland unit: Figure App B Estima	ted size 0.05 acres

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п п гv Х</u>

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

10	
4	
9	
23	

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	Carles -
Estuarine	Depressional	X
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	

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		1/
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		$\times$
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.		$\times$

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

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

## Classification of Wetland Units in Western Washington

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

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

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

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

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

NO go to 3 YES – The wetland class is Flats

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

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

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

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

- \_\_\_\_\_The wetland is on a slope (slope can be very gradual),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- \_\_\_\_The water leaves the wetland without being impounded?
  - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

O go to 5 YES – The wetland class is Slope

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

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

flooding from that stream or river

The overbank flooding occurs at least once every two years.

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

NO- go to 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 we

YES - The wetland class is Depressional

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

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

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

August 2004

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
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: 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 ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing		
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> VES points = 4 NO points = 0	0	
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	Figure	
D	Map of Cowardin vegetation classes         D1.4 Characteristics of seasonal ponding or inundation.         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.         Area seasonally ponded is > ½ total area of wetland       points = 4         Area seasonally ponded is > ¼ total area of wetland       points = 2         Area seasonally ponded is < ¼ total area of wetland       points = 0		
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	5	
D	Total for D 1       Add the points in the boxes above         D 2. Does the wetland unit have the opportunity to improve water quality?         Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.         — Grazing in the wetland or within 150 ft         — Untreated stormwater discharges to wetland         — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging         — Residential, urban areas, golf courses are within 150 ft of wetland         — Wetland is fed by groundwater high in phosphorus or nitrogen         — Other         YES       multiplier is 2		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)	
	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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 . 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	0	
D	<ul> <li>D 3.3 Contribution of wetland unit to storage in the watershed</li> <li>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</li> <li>The area of the basin is less than 10 times the area of unit points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit points = 3</li> <li>The area of the basin is more than 100 times the area of the unit points = 5</li> <li>Entire unit is in the FLATS class</li> </ul>	0	
D	Total for D 3Add the points in the boxes above	4	
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply</i>. — 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</li> </ul>		
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>		
	— Other	1	
5-50	YES multiplier is 2 NO multiplier is 1	<u> </u>	
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	4	

<b>These questions apply to wetlands of all</b> HABITAT FUNCTIONS - Indicators that unit fu		t habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential	to provide habitat for man	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants	efined by Cowardin)- Size thres unit is smaller than 2.5 acres.		Figure
Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30%) If the unit has a forested class check if: The forested class has 3 out of 5 strata (	cover)	wheeeour	
moss/ground-cover) that each cover			0
Add the number of vegetation structures that quality Map of Cowardin vegetation classes		points = 4 points = 2	
Map of cowardin vegetation classes	2 structures 1 structure	points = 1 points = 0	
H 1.2. Hydroperiods (see p. 73)	V 1 structure	points – 0	Figure
regime has to cover more than 10% of the wetland descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, o Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types present 3 types present 2 types present 1 type present r adjacent to, the wetland	t points = 3 points = 2 point = 1 points = 0	]
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlar of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed canan If you counted: List species below if you want to:	e size threshold)		1

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

#### Comments

14

H 2. Does the wetland unit have the opportunity to p	provide habitat for many species?	21216
<ul> <li>1 2.1 <u>Buffers</u> (see p. 80)</li> <li>Choose the description that best represents condition of bufferiterion that applies to the wetland is to be used in the ratin undisturbed."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated are of circumference. No structures are within the undi undisturbed also means no-grazing, no landscaping,</li> </ul>	eg. See text for definition of eas, rocky areas, or open water >95% sturbed part of buffer. (relatively no daily human use) <b>Points = 5</b>	Figure _
<ul> <li>100 m (330 ft) of relatively undisturbed vegetated ar 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated are circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated are circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated are circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated are circumference.</li> <li>Mo paved areas (except paved trails) or buildings with circumference. Light to moderate grazing, or lawns</li> <li>No paved areas or buildings within 50m of wetland ft Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more that fields, paving, basalt bedrock extend to edge of wetlat Buffer does not meet any of the criteria above.</li> </ul>	Points = 4as, rocky areas, or open water >95%Points = 4eas, rocky areas, or open water > 25%Points = 3as, rocky areas, or open water for >Points = 3as, rocky areas, or open water for >Points = 3e criteria abovethin 25 m (80ft) of wetland > 95%are OK.Points = 2For >50% circumference.Points = 2Points = 1n 95% of the circumference (e.g. tilled	1
H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed a (either riparian or upland) that is at least 150 ft wide, ha or native undisturbed prairie, that connects to estuaries, uplands that are at least 250 acres in size? (dams in rip roads, paved roads, are considered breaks in the corrid YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undisturbed a (either riparian or upland) that is at least 50ft wide, has forest, and connects to estuaries, other wetlands or undi acres in size? OR a Lake-fringe wetland, if it does not the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water est within 3 mi of a large field or pasture (>40 acress within_1 mi of a lake greater than 20 acres?	and unbroken vegetated corridor as at least 30% cover of shrubs, forest other wetlands or undisturbed varian corridors, heavily used gravel dor). NO = go to H 2.2.2 and unbroken vegetated corridor at least 30% cover of shrubs or isturbed uplands that are at least 25 thave an undisturbed corridor as in NO = H 2.2.3 uary OR	1

Total for page\_

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
	connections do not have to be relatively undisturbed.	
	These are DFW definitions. Check with your local DFW biologist if there are any questions.	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
1	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
	forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
1	trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
I	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
I	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-	
l	growth; 80 - 200 years old west of the Cascade crest.	
l	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
l	grasses and/or forbs form the natural climax plant community.	
l	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
l	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	1
l	tailings. May be associated with cliffs.	1
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
	canopy coverage of the oak component of the stand is 25%.	
l	Urban Natural Open Space: A priority species resides within or is adjacent to the open	
	space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
	corridor connecting other priority habitats, especially those that would otherwise be	
	isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
	acres) and is surrounded by urban development.	
	<b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
	enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
	in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
	The salinity may be periodically increased above that of the open ocean by evaporation.	
	Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
	habitat extends upstream and landward to where ocean-derived salts measure less than	
	0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
	beaches, and may also include the backshore and adjacent components of the terrestrial	
	landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
	associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
	recruitment, nutrient contribution, erosion control).	
	If wetland has 3 or more priority habitats = 4 points	
	If wetland has 2 priority habitats = 3 points	
	If wetland has 1 priority habitat = 1 point 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)	

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile.</li> <li>There are at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	3
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 14	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	9

		TERN WASHINGTON and reproducibility among users
Name of wetland (if known):	and K	Date of site visit: 6/21/07
Rated by Greg Allington	Trained by Eco	ology? Yes_No_X Date of training
SEC: 32 TWNSHP: 23NRNGE: 11	✓ Is S/T/R in Appe	ndix D? Yes No_X
Map of wetland unit	: Figure <u>App1</u> 3 E	stimated size O.01 acres
SUN	IMARY OF R	ATING
Category based on FUNCTION		etland
Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50	Score fo	Water Quality Functions 10 or Hydrologic Functions 4 re for Habitat Functions 9
Category IV = Score < 30	ΤΟΤΑ	AL score for Functions 23

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply\_X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	and
Estuarine	Depressional	X
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	Γ

1

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> 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.

### **Classification of Wetland Units in Western Washington**

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

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

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

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

- The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
  - (NO) go to 3 YES The wetland class is Flats

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

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

(NQ-go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
  - The wetland is on a slope (slope can be very gradual).
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
    - \_\_\_\_The water leaves the wetland without being impounded?
      - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

NO) go to 5 **YES** – The wetland class is **Slope** 

5. 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.

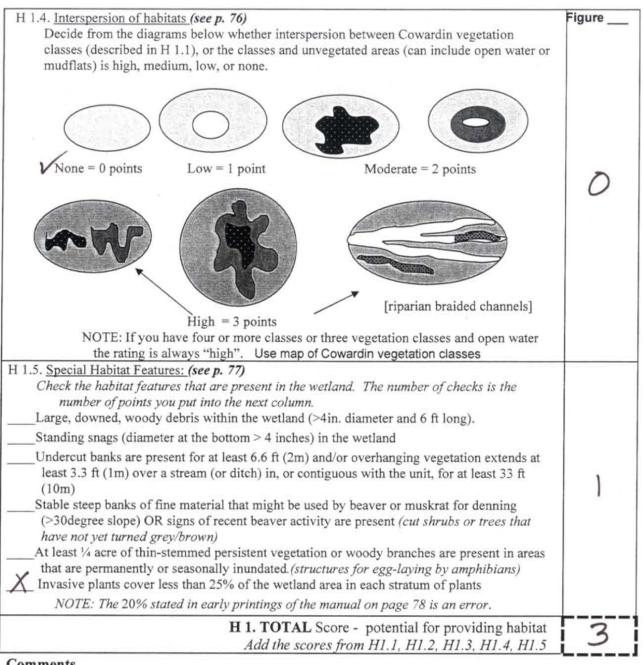
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)	
D	D L1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure	
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS		
D	definitions) YES NO points = 4 points = 0	0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0	Figure	
	Map of Cowardin vegetation classes	Figure	
D	D1.4 Characteristics of seasonal ponding or inundation.         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.         Area seasonally ponded is > ½ total area of wetland       points = 4         Area seasonally ponded is > ¼ total area of wetland       points = 2         Area seasonally ponded is < ¼ total area of wetland       points = 0		
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	6	
D		Э (see р. 44)	
D	<ul> <li>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.</li> <li>— Grazing in the wetland or within 150 ft</li> <li>— Untreated stormwater discharges to wetland</li> <li>— A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>— Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>— Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>— Other</li> </ul>		
	YES multiplier is 2 NO multiplier is 1		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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	0
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	4
D	<ul> <li>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.</li> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> </ul>	(see p. 49)
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier
	- Other 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	4

These questions apply to wetlands of all ABITAT FUNCTIONS - Indicators that unit		t Points (only 1 sci per boy
1. Does the wetland unit have the potentia		1.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2
1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as	defined by Cowardin)- Size threshold for	Figure
class is ¼ acre or more than 10% of the area i Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strata moss/ground-cover) that each cove Add the number of vegetation structures that qua	>30% cover) % cover) a (canopy, sub-canopy, shrubs, herbaceou er 20% within the forested polygon	is, Ô
		ts = 4
Map of Cowardin vegetation classes	2 structures point	s = 2 s = 1
1.2. Hydroperiods (see p. 73)	structure point	Figure
Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, Seasonally flowing stream in, or adjacen Lake-fringe wetland = 2 points	or adjacent to, the wetland by the w	s = 0
Freshwater tidal wetland = 2 points	Map of hydroperiods	S
1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the weth of the same species can be combined to meet You do not have to name the species. Do not include Eurasian Milfoil, reed can If you counted List species below if you want to:	the size threshold) parygrass, purple loosestrife, Canadian I	Thistle = 2 = 1



#### Comments

H 2. Does the wetland unit have the opportunity to	provide habitat for many species?	
<ul> <li>H 2. Does the wetland unit have the opportunity to H 2.1 Buffers (see p. 80)</li> <li>Choose the description that best represents condition of b criterion that applies to the wetland is to be used in the rat"undisturbed."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the unundisturbed also means no-grazing, no landscapin</li> <li>— 100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated s0% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated s0% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated s0% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated s0% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated s0% circumference.</li> </ul>	uffer of wetland unit. The highest scoring tring. See text for definition of areas, rocky areas, or open water >95% adisturbed part of buffer. (relatively g, no daily human use) <b>Points = 5</b> areas, rocky areas, or open water > <b>Points = 4</b> areas, rocky areas, or open water >95% <b>Points = 4</b> areas, rocky areas, or open water >25% <b>Points = 3</b> areas, rocky areas, or open water for > <b>Points = 3</b> the criteria above within 25 m (80ft) of wetland > 95%	Figure
<ul> <li>No paved areas or buildings within 50m of wetlan Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more the fields, paving, basalt bedrock extend to edge of we Buffer does not meet any of the criteria above.</li> </ul>	d for >50% circumference. <b>Points = 2</b> <b>Points = 1</b> han 95% of the circumference (e.g. tilled	
<ul> <li>H 2.2 <u>Corridors and Connections</u> (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturbed (either riparian or upland) that is at least 150 ft wide, or native undisturbed prairie, that connects to estuari uplands that are at least 250 acres in size? (dams in troads, paved roads, are considered breaks in the con YES = 4 points (go to H 2.3)</li> <li>H 2.2.2 Is the wetland part of a relatively undisturbed (either riparian or upland) that is at least 50ft wide, h forest, and connects to estuaries, other wetlands or un acres in size? OR a Lake-fringe wetland, if it does the question above?</li> <li>YES = 2 points (go to H 2.3)</li> <li>H 2.2.3 Is the wetland:</li> <li>within 5 mi (8km) of a brackish or salt water within 3 mi of a large field or pasture (&gt;40 ac within 1 mi of a lake greater than 20 acres? (YES = 1 point</li> </ul>	d and unbroken vegetated corridor , has at least 30% cover of shrubs, forest es, other wetlands or undisturbed <i>riparian corridors, heavily used gravel</i> <i>ridor</i> ). NO = go to H 2.2.2 d and unbroken vegetated corridor has at least 30% cover of shrubs or ndisturbed uplands that are at least 25 not have an undisturbed corridor as in NO = H 2.2.3 estuary OR	

Total for page 2

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82) Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
<b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	1
<b>Talus:</b> 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	,
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point 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)	

points = 2 points = 0	There is at least 1 wetland within ½ mile.
	There are no wetlands within <sup>1</sup> / <sub>2</sub> mile.
roviding habitat	H 2. TOTAL Score - opportu
	Add the scores fro
1 from page 14 <b>3</b>	TOT

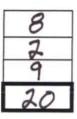
WETLAND RATING FORM – WEST Version 2 - Updated July 2006 to increase accuracy and	
Name of wetland (if known): We Hand L	Date of site visit: 6/22/07
Rated by Greg Allington Trained by Ecolo	ogy? Yes_No_X Date of training
SEC: 32 TWNSHP: 23N RNGE: 1W Is S/T/R in Appen	
Map of wetland unit: Figure And Es	stimated size 0.32 deres

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п п тх Х</u>

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



Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	States -
Estuarine	Depressional	X
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

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		K
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		×
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.

August 2004

6.3

#### Classification of Wetland Units in Western Washington

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

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

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

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

- 2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
  - NO- go to 3 YES The wetland class is Flats

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

- 3. Does the entire wetland unit meet both of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
  - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
  - NO)- go to 4 YES The wetland class is Lake-fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - \_\_\_\_\_The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - \_\_\_\_The water leaves the wetland without being impounded?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).
  - NO go to 5 YES The wetland class is Slope

5. 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.

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

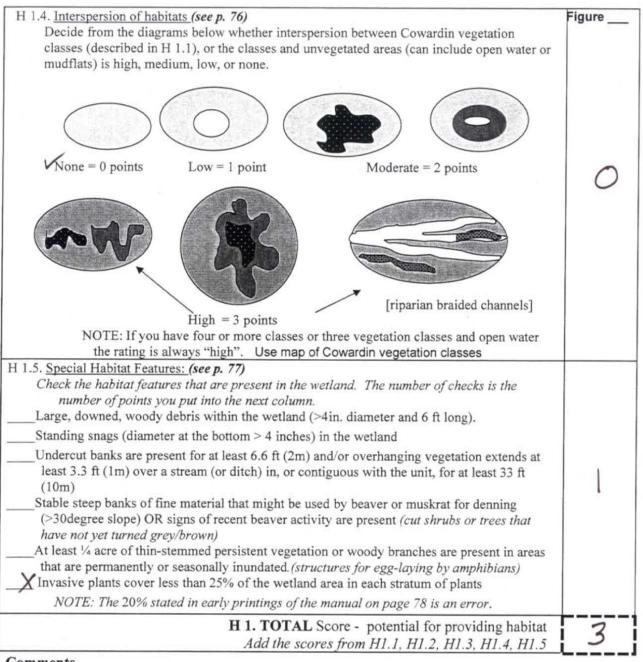
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
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: 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 ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <= 1/10 of area points = 0 Map of Cowardin vegetation classes	Figure
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation.</li> <li>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.</li> <li>Area seasonally ponded is &gt; ½ total area of wetland points = 4</li> <li>Area seasonally ponded is &gt; ¼ total area of wetland points = 2</li> <li>Area seasonally ponded is &lt; ¼ total area of wetland points = 0</li> </ul>	Figure
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	4
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li> </ul>	(see p. 44) multiplier
D	YES         multiplier is 2         NO         multiplier is 1           TOTAL - Water Quality Functions         Multiply the score from D1 by D2	
D	Add score to table on p. 1	8

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 Onit 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 0	2
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"points = 5Marks 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 trapwaterWarks of ponding less than 0.5 ftMarks of ponding less than 0.5 ft	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	2
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply</i>. — 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</li> </ul>	(see p. 49)
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier
	- Other YES multiplier is 2 NO multiplier is 1	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	2

6

These questions apply to wetlands of all IABITAT FUNCTIONS - Indicators that unit for	All the second sec	t habitat	Points (only 1 sc per boy
	The cost of the state of the st	and the second	per bo
<b>I 1. Does the wetland unit have the <u>potential</u> I 1.1 Vegetation structure <i>(see p. 72)</i></b>	to provide nabitat for many	y species:	Figure
Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strate (	unit is smaller than 2.5 acres. 30% cover) cover) (canopy, sub-canopy, shrubs, he	erbaceous,	D
moss/ground-cover) that each cover		n	
Add the number of vegetation structures that quality Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures	points = 4 points = 2 points = 1	
1.2. Hydroperiods (see p. 73)	✓ structure	points $= 0$	Figure
Check the types of water regimes (hydroperiod regime has to cover more than 10% of the wetlan descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, o Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types presen 3 types present 2 types present 1 type present or adjacent to, the wetland	for t points = 3 points = 2 point = 1 points = 0	1
	Map of Hyd	openous	
<ul> <li>1.3. <u>Richness of Plant Species</u> (see p. 75)</li> <li>Count the number of plant species in the wetlar of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canal If you counted:</li> <li>List species below if you want to:</li> </ul>	e size threshold) rygrass, purple loosestrife, Cai		



#### Comments

H 2. Does the wetland unit have the opportunity	to provide habitat for many species?	10.50
H 2.1 Buffers (see p. 80)		Figure
<ul> <li>Choose the description that best represents condition of criterion that applies to the wetland is to be used in the r "undisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the undisturbed also means no-grazing, no landscapi - 100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>Mo paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or law</li> <li>No paved areas or buildings within 50m of wetla Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of w Buffer does not meet any of the criteria above.</li> </ul>	that ing. See text for definition of d areas, rocky areas, or open water >95% and isturbed part of buffer. (relatively ing, no daily human use) Points = 5 d areas, rocky areas, or open water > Points = 4 areas, rocky areas, or open water >95% Points = 4 d areas, rocky areas, or open water > 25% Points = 3 areas, rocky areas, or open water for > Points = 3 f the criteria above within 25 m (80ft) of wetland > 95% wns are OK. Points = 2 nd for >50% circumference. Points = 1 than 95% of the circumference (e.g. tilled	
H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 150 ft wid or native undisturbed prairie, that connects to estua uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the con- YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 50ft wide, forest, and connects to estuaries, other wetlands or acres in size? OR a Lake-fringe wetland, if it does the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water within 5 mi of a large field or pasture (>40 a within 1 mi of a lake greater than 20 acres? (YES)= 1 point	e, has at least 30% cover of shrubs, forest ries, other wetlands or undisturbed a riparian corridors, heavily used gravel prridor). NO = go to H 2.2.2 ed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 is not have an undisturbed corridor as in NO = H 2.2.3 r estuary OR	1

Total for page 2

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
	connections do not have to be relatively undisturbed.	
	These are DFW definitions. Check with your local DFW biologist if there are any questions.	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
	forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
	trees/acre) $> 81$ cm (32 in) dbh or $> 200$ years of age.	
	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
	may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
l	snags, and quantity of large downed material is generally less than that found in old-	
I	growth; 80 - 200 years old west of the Cascade crest.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
l	grasses and/or forbs form the natural climax plant community.	
I	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
l	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
l	tailings. May be associated with cliffs.	
I	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	1
l	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	1
	canopy coverage of the oak component of the stand is 25%.	
	Urban Natural Open Space: A priority species resides within or is adjacent to the open	
	space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
	corridor connecting other priority habitats, especially those that would otherwise be	
	isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
	acres) and is surrounded by urban development.	
	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
	enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
	in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
	The salinity may be periodically increased above that of the open ocean by evaporation.	
	Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
	habitat extends upstream and landward to where ocean-derived salts measure less than	
	0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons. Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
	beaches, and may also include the backshore and adjacent components of the terrestrial	
	landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
	associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
	recruitment, nutrient contribution, erosion control).	
	If wetland has <b>3 or more</b> priority habitats = $4 \text{ points}$	
	If we thank has 2 priority habitats = 3 points	
	If we than 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)	
	The second of the second with a second with the second shares a second state of the se	

16

otal Score for Habitat Functions – add the points for H 1, H 2 and record the result of p. 1	9
TOTAL for H 1 from page 14	3
H 2. TOTAL Score - opportunity for providing habita Add the scores from H2.1,H2.2, H2.3, H2.4	6
<ul> <li>2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile.</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile.</li> <li>There is at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	3

WETLAND RATING FORM – WESTERN V Version 2 - Updated July 2006 to increase accuracy and reprod	
Name of wetland (if known): Wetland M	Date of site visit: 6/22/07-
Rated by Greg Allington Trained by Ecology?	res_NoX Date of training
SEC: 37 TWNSHP: 23N RNGE: IW Is S/T/R in Appendix D?	
Map of wetland unit: Figure App B Estimate	ed size 0.03 acres

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п п тх х</u>

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

Γ	10	
Γ	4	
	9	
	23	

**TOTAL score for Functions** 

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	and and
Estuarine	Depressional	X
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	

August 2004

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

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

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

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

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

11

#### **Classification of Wetland Units in Western Washington**

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

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

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

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

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

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

NO- go to 3 YES – The wetland class is Flats

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

- 3. Does the entire wetland unit meet both of the following criteria?
  - \_\_\_\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
  - NQ- go to 4 YES The wetland class is Lake-fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - \_\_\_\_\_The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - \_\_\_\_The water leaves the wetland without being impounded?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).
  - NO) go to 5 YES The wetland class is Slope

5. 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.

NO2 go to 8 YES - The wetland class is Depressional.

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

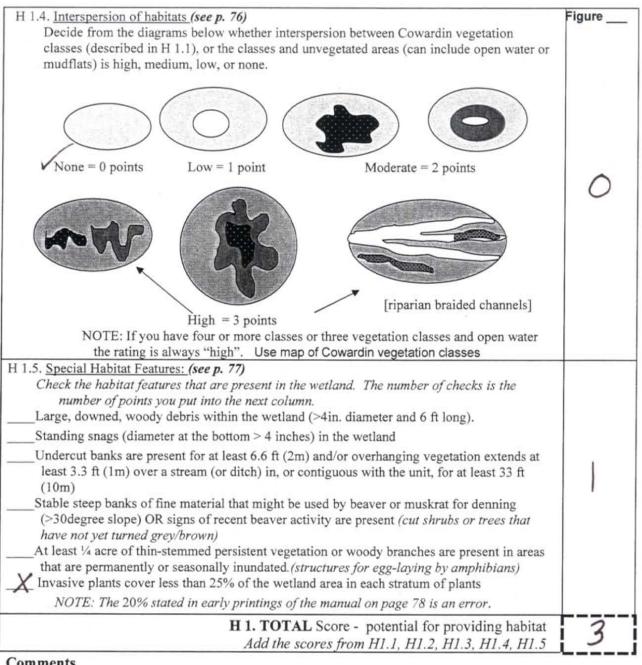
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)
	improve water quality	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	D LY Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4	0
	points = 0	Figure
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	
	D1.4 Characteristics of seasonal ponding or inundation.	Figure
D	This is the area of the wetland unit that is ponded for at least 2 months, but dries outsometime during the year. Do not count the area that is permanently ponded. Estimatearea as the average condition 5 out of 10 yrs.Area seasonally ponded is > ½ total area of wetlandpoints = 4Area seasonally ponded is > ½ total area of wetlandpoints = 2Area seasonally ponded is < ¼ total area of wetlandpoints = 0Map of Hydroperiods	2
D	Total for D 1       Add the points in the boxes above	6
D	<ul> <li>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.</li> <li>— Grazing in the wetland or within 150 ft</li> <li>— Untreated stormwater discharges to wetland</li> <li>— A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>— Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>— Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other Other MO multiplier is 1</li> </ul>	(see p. 44) multiplier
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2	10
D	Add score to table on p. 1	10

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	(see p.46)
D	D 3.4 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 outlet	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply.</i> — 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</li> </ul>	(see p. 49)
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier
	— Other	1
	YES multiplier is 2 NO multiplier is 1	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	

These questions apply to wetlands of all HABITAT FUNCTIONS - Indicators that unit f	the second se	oitat	Points (only 1 sc per bo
I 1. Does the wetland unit have the potential	to provide habitat for many spe	ecies?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as a class is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30%	lefined by Cowardin)- Size threshold unit is smaller than 2.5 acres.	-	Figure _
If the unit has a forested class check if: The forested class has 3 out of 5 strata moss/ground-cover) that each cover		eous,	C
Add the number of vegetation structures that quali			
Map of Cowardin vegetation classes	4 structures or more p 3 structures p	oints = 4 oints = 2 oints = 1	
		oints = 0	
regime has to cover more than 10% of the wetland descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points 1.3. Richness of Plant Species (see p. 75)	4 or more types present p 3 types present p 2 types present p 1 type present p or adjacent to, the wetland	$\begin{array}{l} \text{points} = 3\\ \text{oints} = 2\\ \text{point} = 1\\ \text{oints} = 0\\ \end{array}$	Ĩ
Count the number of plant species in the wetlat of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed cana If you counted: List species below if you want to:	ne size threshold) rygrass, purple loosestrife, Canadia >19 species poin V5 - 19 species poin		1
		Total for p	



#### Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	1 ( 2013
H 2.1 Buffers (see p. 80)	Figure
<ul> <li>If 2.1 <u>Suffers</u> (see p. 60)</li> <li>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." <ul> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use)</li> <li>Points = 5</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference.</li> <li>Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference.</li> <li>Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference.</li> <li>Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference.</li> <li>Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference.</li> <li>Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference.</li> <li>Points = 3</li> <li>If buffer does not meet any of the criteria above</li> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK.</li> <li>Points = 2</li> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference.</li> <li>Light to moderate grazing, or lawns are OK.</li> <li>Points = 1</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland</li> <li>Points = 0.</li> <li>Puints = 1</li> <li>Aerial photo showing buffers</li> </ul> </li> </ul>	
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? ( <i>dams in riparian corridors, heavily used gravel</i> <i>roads, paved roads, are considered breaks in the corridor</i> ). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? (YES = 1 point NO = 0 points	1

Total for page 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82) Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres). Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; 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 oldgrowth; 80 - 200 years old west of the Cascade crest. Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. Caves: A naturally occurring cavity, recess, void, or system of interconnected passages Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other priority habitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. X Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semienclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons. Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control). If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point 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)

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile</li> </ul>		3
wetland within $\frac{1}{2}$ mile There is at least 1 wetland within $\frac{1}{2}$ mile. There are no wetlands within $\frac{1}{2}$ mile.	points = 3 points = 2 points = 0	
<b>H 2</b> . TOTAL Score - opportunity fo Add the scores from H2.		6
TOTAL for	r H 1 from page 14	3
Total Score for Habitat Functions – add the points for H 1, H 2 and r	record the result on p. 1	9

WETLAND RATING FORM Version 2 - Updated July 2006 to increase	I – WESTERN WASHINGTON accuracy and reproducibility among users
Name of wetland (if known): <u>We Hand</u> Rated by <u>Greg Allington</u> Traine SEC:37-TWNSHP:23NRNGE: <u>IW</u> IS S/T/R	N Date of site visit: $6/22/07ed by Ecology? Yes_NoX Date of trainingin Appendix D? Yes NoX$
Map of wetland unit: Figure	pB Estimated size <u>0,09 acres</u>
SUMMARY Category based on FUNCTIONS provide IIIIIIIVX	OF RATING
Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	core for Water Quality Functions10Score for Hydrologic Functions4Score for Habitat Functions9TOTAL score for Functions23

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	X
Natural Heritage Wetland	Riverine	1
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	Γ

1

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul><li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li><li>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).</li></ul>		×
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		×

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

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

#### **Classification of Wetland Units in Western Washington**

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

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

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

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

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

All as to 2 VES. The watland class is Elete

NO- go to 3 YES – The wetland class is Flats

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

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

#### NOJ 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).

NO2 go to 5 YES – The wetland class is Slope

August 2004

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 **(ES)** The wetland class is **Depressional** 

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

(NO) go to 8 YES – The wetland class is Depressional

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

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)	
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3		
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS)</i>		
D	definitions) YES NO points = 4 points = 0	0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)         Wetland has persistent, ungrazed, vegetation > = 95% of area       points = 5         Wetland has persistent, ungrazed, vegetation > = 1/2 of area       points = 3         Wetland has persistent, ungrazed vegetation > = 1/10 of area       points = 1         Wetland has persistent, ungrazed vegetation > = 1/10 of area       points = 1         Wetland has persistent, ungrazed vegetation < 1/10 of area       points = 0	Figure	
	Map of Cowardin vegetation classes		
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation. 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. Area seasonally ponded is &gt; ½ total area of wetland Area seasonally ponded is &lt; ¼ total area of wetland Area seasonally ponded is &lt; ¼ total area of wetland points = 0 Map of Hydroperiods</li> </ul>	Figure	
D	Total for D 1       Add the points in the boxes above	5	
D	<ul> <li>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.</li> <li>— Grazing in the wetland or within 150 ft</li> <li>W Untreated stormwater discharges to wetland</li> <li>— A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>— Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>— Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li></ul>		
D	YES multiplier is 2 NO multiplier is 1 TOTAL Water Quality Functions Multiply the score from D1 by D2		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

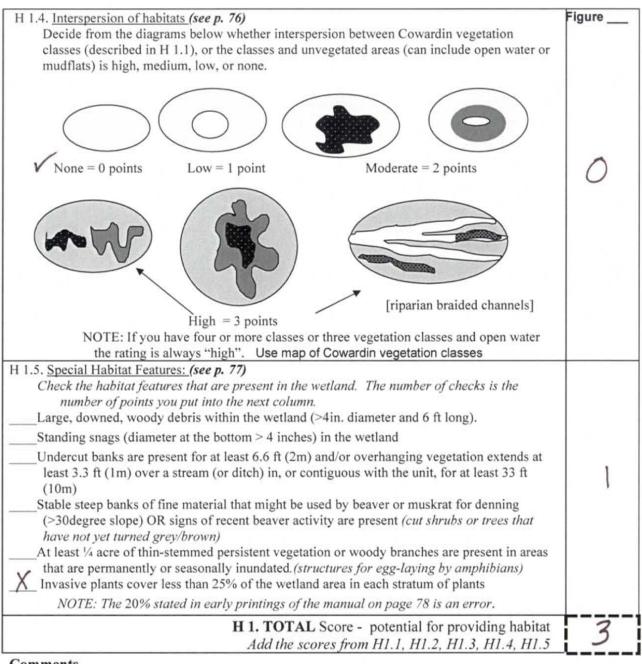
5

August 2004

Wetland name or number  $\mathcal{N}$ 

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)	
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		
D	D 3 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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	0	
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 wetland to 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	٥	
D	Total for D 3Add the points in the boxes above	4	
D	<ul> <li>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.         <ul> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland has no outlet and impounds surface runoff water that might otherwise</li> </ul> </li> </ul>		
	flow into a river or stream that has flooding problems	multiplier	
	— Other		
-	YES multiplier is 2 NO multiplier is 1		
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	4	

These questions apply to wetlands of all A HABITAT FUNCTIONS - Indicators that unit for		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential	to provide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if the Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30%) If the unit has a forested class check if:	unit is smaller than 2.5 acres. 30% cover)	hold for each	Figure
The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover Add the number of vegetation structures that qualij	20% within the forested polygo		$\bigcirc$
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperiod regime has to cover more than 10% of the wetla descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, o Seasonally flowing stream in or ediscort	ls) present within the wetland. If nd or ¼ acre to count. (see text) 4 or more types present 3 types present 2 types present 1 type present or adjacent to, the wetland	The water for t points = 3	Figure
Seasonally flowing stream in, or adjacent <i>Lake-fringe wetland</i> = 2 points <i>Freshwater tidal wetland</i> = 2 points	to, the wetland Map of hydr	roperiods	
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlan of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed cana If you counted: List species below if you want to:	ne size threshold) rygrass, purple loosestrife, Can		1
		Total for	page_Z



#### Comments

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

H 2. Does the wetland unit have the opportunity t	o provide habitat for many species?	
H 2.1 Buffers (see p. 80)		
	ating. See text for definition of areas, rocky areas, or open water >95% indisturbed part of buffer. (relatively ing, no daily human use) Points = 5 d areas, rocky areas, or open water > Points = 4 areas, rocky areas, or open water >95% Points = 4 areas, rocky areas, or open water > 25% Points = 3 areas, rocky areas, or open water for > Points = 3 f the criteria above within 25 m (80ft) of wetland > 95% vns are OK. Points = 2 nd for >50% circumference. Points = 1 than 95% of the circumference (e.g. tilled	]
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 150 ft wide or native undisturbed prairie, that connects to estual uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the con- YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 50ft wide, forest, and connects to estuaries, other wetlands or acres in size? OR a Lake-fringe wetland, if it does the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt wate within 5 mi of a large field or pasture (>40 a within 5 mi of a lake greater than 20 acres?	e, has at least 30% cover of shrubs, forest ries, other wetlands or undisturbed <i>a riparian corridors, heavily used gravel</i> <i>prridor</i> ). NO = go to H 2.2.2 ed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 s not have an undisturbed corridor as in NO = H 2.2.3 r estuary OR acres) OR	1
(YES) = 1 point	NO = 0 points	

Total for page

Wetland Rating Form – western Washington version 2

August 2004

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
<b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) $> 81$ cm (32 in) dbh or $> 200$ years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	,
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	1
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
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. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4 TOTAL for H 1 from page 14	6
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 <b>with</b> 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

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users			
Name of wetland (if known): Wetland	0 Date of site visit: 6/22/07		
Rated by Greg Allington Th	rained by Ecology? Yes_No $X$ Date of training		
SEC: 32 TWNSHP: 23NRNGE: IN Is S.			
Map of wetland unit: Figur	re App B Estimated size <u>0.18 acre</u> S		
SUMMA	RY OF RATING		
Category based on FUNCTIONS prov	vided by wetland		
<u>і п п п тх Х</u>			
Category I = Score >=70	Score for Water Quality Functions		
Category II = Score 51-69	Score for Hydrologic Functions		
Category III = Score 30-50 Category IV = Score < 30	Score for Habitat Functions		
	TOTAL score for Functions 23		
Category based on SPECIAL CHARA	ACTERISTICS of wetland		
I II Does not ApplyX			
Final Category (choose th	e "highest" category from above)		
Summary of basic information about the wetland unit			

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	and a second
Estuarine	Depressional	X
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	

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		$\times$
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

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

#### Classification of Wetland Units in Western Washington

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

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

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

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

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

NO- go to 3 YES - The wetland class is Flats

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

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

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

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

- \_\_\_\_\_The wetland is on a slope (slope can be very gradual),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- \_\_\_\_The water leaves the wetland without being impounded?
  - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

NO2 go to 5 YES – The wetland class is Slope

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

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

flooding from that stream or river

The overbank flooding occurs at least once every two years.

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

NO- go to 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.

(NQ)- go to 8 YES - The wetland class is Depressional

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

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)	
D	DVA Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3		
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS		
D	definitions) YES points = 4 NO points = 0	0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0	Figure	
	Map of Cowardin vegetation classes D1.4 Characteristics of seasonal ponding or inundation.	Figure	
D	This is the area of the wetland unit that is ponded for at least 2 months, but dries out		
D	Total for D 1       Add the points in the boxes above	5	
D	<ul> <li>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.         <ul> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li></ul></li></ul>		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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"points = 5Marks 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 trapwaterWarks of ponding less than 0.5 ftMarks of ponding less than 0.5 ft	0
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 = 0Entire unit is in the FLATS classpoints = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply.</i> — 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</li> </ul>	
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier
	— Other	1
D	YES multiplier is 2 NO multiplier is 1 TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	
D	Add score to table on p. 1	4

These questions apply to wetlands of all H HABITAT FUNCTIONS - Indicators that unit fur		habitat	Points (only 1 sco per box
H 1. Does the wetland unit have the potential to	o provide habitat for many	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as defined class is ¼ acre or more than 10% of the area if us Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >3)	nit is smaller than 2.5 acres.	old for each	Figure
Forested (areas where trees have >30% co If the unit has a forested class check if: The forested class has 3 out of 5 strata (c moss/ground-cover) that each cover 2 Add the number of vegetation structures that qualify	over) canopy, sub-canopy, shrubs, her 0% within the forested polygon		6
Map of Cowardin vegetation classes	3 structures 2 structures 1 structure	points = 2 points = 1 points = 0	
Check the types of water regimes (hydroperiods) regime has to cover more than 10% of the wetland descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent t Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	d or ¼ acre to count. (see text f 4 or more types present 3 types present 2 types present 1 type present adjacent to, the wetland	points = 3 points = 2 point = 1 points = 0	]
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canary If you counted: List species below if you want to:	vgrass, purple loosestrife, Can 19 species 5 - 19 species		1

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

#### Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	STARTING.
H 2.1 <u>Buffers</u> (see p. 80) Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."	Figure
<ul> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;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</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference, Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference. Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference. Points = 3</li> <li>Multiple does not meet any of the criteria above</li> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 1</li> <li>Vegetated buffers are &lt;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</li> <li>Aerial photo showing buffers</li> </ul>	1
H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 3 mi of a lake greater than 20 acres? (YES = 1 point NO = 0 points	1

Total for page 2

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
	connections do not have to be relatively undisturbed.	
	These are DFW definitions. Check with your local DFW biologist if there are any questions.	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
	forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
I	trees/acre) $> 81$ cm (32 in) dbh or $> 200$ years of age.	
	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
I	may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
l	snags, and quantity of large downed material is generally less than that found in old-	
۱	growth; 80 - 200 years old west of the Cascade crest.	
l	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
l	grasses and/or forbs form the natural climax plant community.	
l	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
l	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	1
I	tailings. May be associated with cliffs.	
l	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	,
l	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
l	canopy coverage of the oak component of the stand is 25%.	
l	Urban Natural Open Space: A priority species resides within or is adjacent to the open	
	space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
	corridor connecting other priority habitats, especially those that would otherwise be	
	isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
	<ul> <li>acres) and is surrounded by urban development.</li> </ul>	
	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
	enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
	in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
	The salinity may be periodically increased above that of the open ocean by evaporation.	
	Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
	habitat extends upstream and landward to where ocean-derived salts measure less than	
	0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
	beaches, and may also include the backshore and adjacent components of the terrestrial	
	landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
	associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
	recruitment, nutrient contribution, erosion control).	
	If wetland has 3 or more priority habitats = 4 points	
	If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitats = 1 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	
ļ	list. Nearby wetlands are addressed in question H 2.4)	

16

<b>Fotal Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	9
TOTAL for H 1 from page 14	3
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
There are no wetlands within $\frac{1}{2}$ mile. points = 0	
There is at least 1 wetland within $\frac{1}{2}$ mile. points = 2	
wetland within <sup>1</sup> / <sub>2</sub> mile points = 3	
The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe	
disturbed points = 3	
wetlands within $\frac{1}{2}$ mile points = 5 There are at least 3 other wetlands within $\frac{1}{2}$ mile, BUT the connections between them are	2
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	2
development. points = 5	
boating, but connections should NOT be bisected by paved roads, fill, fields, or other	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some	
<i>best fits</i> ) (see p. 84) There are at least 3 other wetlands within ½ mile, and the connections between them are	
2.4 <u>Wetland Landscape</u> (choose the <b>one</b> description of the landscape around the wetland that	

WETLAND RATING FORM – WESTERN WA Version 2 - Updated July 2006 to increase accuracy and reproduci	
Name of wetland (if known): Wetland P	Date of site visit: 6/22/07
Rated by Greg Allington Trained by Ecology? Yes	
SEC: 32 TWNSHP: 23MRNGE: W Is S/T/R in Appendix D? Y	
Map of wetland unit: Figure App B Estimated	

# 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

10	
4	
9	
23	

Category based on SPECIAL CHARACTERISTICS of wetland

I I Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	1000 BA
Estuarine	Depressional	X
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	

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		X
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		$\boldsymbol{\times}$
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.		χ

## 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.

2

#### Classification of Wetland Units in Western Washington

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

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

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

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

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

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

NO2 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)?

NQ-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).

VQ- go to 5 YES – The wetland class is Slope

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

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

flooding from that stream or river

The overbank flooding occurs at least once every two years.

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

NO- go to 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 **XES** – The wetland class is **Depressional** 

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

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

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

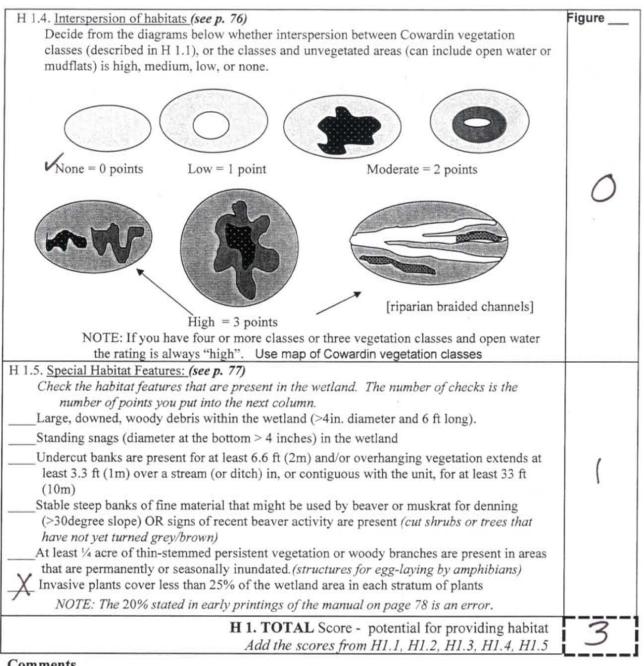
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure
D	D1.4 Characteristics of seasonal ponding or inundation.This is the area of the wetland unit that is ponded for at least 2 months, but dries outsometime during the year. Do not count the area that is permanently ponded. Estimatearea as the average condition 5 out of 10 yrs.Area seasonally ponded is > ½ total area of wetlandpoints = 4Area seasonally ponded is > ¼ total area of wetlandpoints = 2Area seasonally ponded is < ¼ total area of wetlandpoints = 0	Figure
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	5
D	<ul> <li>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.         <ul> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> </ul> </li> </ul>	(see p. 44) multiplier
	- Wetland is fed by groundwater high in phosphorus or nitrogen Other multiplier is 2 NO multiplier is 1	_ <u></u>
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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.</li> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	(see p. 49) multiplier
	flow into a river or stream that has flooding problems — Other	Interprier
	YES multiplier is 2 (NO) multiplier is 1	
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	4

These questions apply to wetlands of all ABITAT FUNCTIONS - Indicators that unit		t habitat	Points (only 1 sc per bo)
1. Does the wetland unit have the potential		a state of the second second second	
1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as a class is ¼ acre or more than 10% of the area ij Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have = Forested (areas where trees have >30% If the unit has a forested class check if:	defined by Cowardin)- Size thre: f unit is smaller than 2.5 acres. >30% cover)		Figure
The forested class has 3 out of 5 strata moss/ground-cover) that each cover Add the number of vegetation structures that qual Map of Cowardin vegetation classes	r 20% within the forested polygo		0
1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiod			Figure
regime has to cover more than 10% of the wetle descriptions of hydroperiods)	and or ¼ acre to count. (see text	for	
Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, Seasonally flowing stream in, or adjacen <i>Lake-fringe wetland</i> = 2 points <i>Freshwater tidal wetland</i> = 2 points		points = 2 point = 1 points = 0	]
Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, Seasonally flowing stream in, or adjacen Lake-fringe wetland = 2 points	3 types present 2 types present 1 type present or adjacent to, the wetland Map of hyd and that cover at least 10 ft <sup>2</sup> . (di he size threshold) arygrass, purple loosestrife, Ca	points = 2 point = 1 points = 0 roperiods	



#### Comments

2. Does the wetland unit have the opportunity	to provide habitat for many species?	
12.1 <u>Buffers</u> (see p. 80) <i>Thoose the description that best represents condition of</i> <i>riterion that applies to the wetland is to be used in the r</i> <i>undisturbed.</i> "		Figure
<ul> <li>100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the u undisturbed also means no-grazing, no landscapi</li> <li>100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>Mo paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or law</li> <li>No paved areas or buildings within 50m of wetla Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of w Buffer does not meet any of the criteria above. Aeria</li> </ul>	andisturbed part of buffer. (relatively ng, no daily human use)Points = 5d areas, rocky areas, or open water > Points = 4areas, rocky areas, or open water >95% Points = 4d areas, rocky areas, or open water >25% Points = 3areas, rocky areas, or open water > 25% Points = 3areas, rocky areas, or open water > 25% Points = 3f the criteria above s within 25 m (80ft) of wetland > 95% vns are OK.Points = 2 nd for >50% circumference.Points = 1 	1
<ul> <li>H 2.2 <u>Corridors and Connections</u> (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 150 ft wide or native undisturbed prairie, that connects to estuar uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the converse for YES = 4 points (go to H 2.3)</li> <li>H 2.2.2 Is the wetland part of a relatively undisturbe (either riparian or upland) that is at least 50ft wide, forest, and connects to estuaries, other wetlands or vacres in size? OR a Lake-fringe wetland, if it does the question above?</li> <li>YES = 2 points (go to H 2.3)</li> <li>H 2.2.3 Is the wetland:</li> <li>within 5 mi (8km) of a brackish or salt water within 3 mi of a large field or pasture (&gt;40 a within 3 mi of a lake greater than 20 acres?</li> </ul>	ed and unbroken vegetated corridor e, has at least 30% cover of shrubs, forest ries, other wetlands or undisturbed a riparian corridors, heavily used gravel prridor). NO = go to H 2.2.2 ed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 s not have an undisturbed corridor as in NO = H 2.2.3 r estuary OR	1

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; 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-	1
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	)
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
x acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If we that $3 \text{ or more}$ priority habitats = 4 points	
If we that $2 \text{ priority habitats} = 3 \text{ points}$	
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. Northware lands are addressed in quantian $H^{2}(t)$	
list. Nearby wetlands are addressed in question H 2.4)	

Total Score for Habitat Functions – add the points for H 1, H 2 and record th	result on 9
TOTAL for H 1 fro	page 14 <b>3</b>
<b>H 2</b> . TOTAL Score - opportunity for provid Add the scores from H2.1,H2.2,	- / / / / /
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other la Wetlands within ½ mile There are at least 3 other wetlands within ½ mile, BUT the connections between the disturbed The wetland is Lake-fringe on a lake <b>with</b> disturbance and there are 3 other lake-fri- wetland within ½ mile There is at least 1 wetland within ½ mile.	are ber ber $bints = 5c-fringebints = 5m arebints = 3$

WETLAND RATING FORM – WESTERN Version 2 - Updated July 2006 to increase accuracy and represent	
Name of wetland (if known): Wetland Q	Date of site visit: 6/22/07-
Rated by Greg Allington Trained by Ecology?	
SEC: 32 TWNSHP: 23N RNGE: 1W Is S/T/R in Appendix D	
Map of wetland unit: Figure Appl Estima	ated size Oilel acres
SUMMARY OF RATI	NG

Category based on FUNCTIONS provided by wetland

<u>і п п т х</u>Х

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

10
4
9
23

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply\_X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	X
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	
Old Growth Forest	Flats	1
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	

1

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)		NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		1
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\times$
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		×
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		χ

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

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

#### **Classification of Wetland Units in Western Washington**

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

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

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

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

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

 $N_{p}$  - 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)?

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<sub>2</sub> go to 5 **YES** – The wetland class is **Slope** 

3

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 **XES** 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.

(NQ)- go to 8 YES - The wetland class is Depressional.

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

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)	
D	<ul> <li>D 1.1 Characteristics of surface water flows out of the wetland:</li> <li>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 (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")</li> </ul>		
D	Provide photo or drawing S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 points = 0	0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure	
D	D1.4 Characteristics of seasonal ponding or inundation.         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.         Area seasonally ponded is > ½ total area of wetland       points = 4         Area seasonally ponded is > ¼ total area of wetland       points = 2         Area seasonally ponded is < ¼ total area of wetland       points = 0	Figure	
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	5	
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> </ul>	(see p. 44) multiplier <b>2</b>	
D	YES) multiplier is 2 NO multiplier is 1	<u>_</u>	
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

Wetland name or number  $(\mathbf{y})$ 

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	(see p.46)
D	D 3.1 Characteristics of surface water flows out of the wetland unit V Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3. 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	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply.</i> — 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</li> </ul>	(see p. 49)
	flow into a river or stream that has flooding problems	multiplier
	- Other YES multiplier is 2 MO multiplier is 1	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	4

These questions apply to wetlands of all I			Points (only 1 see
ABITAT FUNCTIONS - Indicators that unit fu	nctions to provide importan	habitat	per box
1. Does the wetland unit have the potential t	o provide habitat for many	species?	
1.1 Vegetation structure (see p. 72)			Figure
Check the types of vegetation classes present (as de class is <sup>1</sup> / <sub>4</sub> acre or more than 10% of the area if u		hold for each	
Aquatic bed			
X Emergent plants			
Scrub/shrub (areas where shrubs have >3	30% cover)		
Forested (areas where trees have >30% c	over)		
If the unit has a forested class check if:			6
The forested class has 3 out of 5 strata (	canopy, sub-canopy, shrubs, he	rbaceous,	
moss/ground-cover) that each cover 2	20% within the forested polygo	n	
Add the number of vegetation structures that qualify	v. If you have:		
	4 structures or more	points = 4	
Map of Cowardin vegetation classes	3 structures	points = 2	
	2 structures	points = 1	
	1 structure	points = 0	
1.2. Hydroperiods (see p. 73)			Figure
Check the types of water regimes (hydroperiods			
regime has to cover more than 10% of the wetlan	nd or $\frac{1}{4}$ acre to count. (see text	for	
descriptions of hydroperiods)			
Permanently flooded or inundated	4 or more types presen		,
Seasonally flooded or inundated	3 types present		
Occasionally flooded or inundated	▶ 2 types present	point = 1	)
X Saturated only	1 type present	points = 0	
Permanently flowing stream or river in, or			
Seasonally flowing stream in, or adjacent	to, the wetland		
Lake-fringe wetland = 2 points			
Freshwater tidal wetland = 2 points	Map of hyd	operiods	
1.3. Richness of Plant Species (see p. 75)			
Count the number of plant species in the wetland		ferent patches	
of the same species can be combined to meet the	e size threshold)		
You do not have to name the species.			
Do not include Eurasian Milfoil, reed canar	ygrass, purple loosestrife, Ca	nadian Thistle	1
If you counted:	> 19 species	points = 2	1 1
List species below if you want to:	✓ 5 - 19 species	points = 1	
	< 5 species	points $= 0$	

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

#### Comments

I 2. Does the wetland unit have the opportunity	to provide habitat for many species?	1. 65 1. 65
<ul> <li>H 2.1 <u>Buffers</u> (see p. 80)</li> <li>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."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively</li> </ul>		
<ul> <li>undisturbed also means no-grazing, no landscapi</li> <li>100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>If buffer does not meet any of circumference. Light to moderate grazing, or law circumference. Light to moderate grazing, or law No paved areas or buildings within 50m of wetla Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of w Buffer does not meet any of the criteria above.</li> </ul>	ing, no daily human use) Points = 5 ed areas, rocky areas, or open water > Points = 4 d areas, rocky areas, or open water >95% Points = 4 d areas, rocky areas, or open water >25% Points = 3 d areas, rocky areas, or open water for > Points = 3 d areas, rocky areas, or open water for > Points = 3 of the criteria above s within 25 m (80ft) of wetland > 95% wns are OK. Points = 2 Points = 1 than 95% of the circumference (e.g. tilled	1
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 150 ft wid or native undisturbed prairie, that connects to estua uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the con- YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undisturb (either riparian or upland) that is at least 50ft wide, forest, and connects to estuaries, other wetlands or acres in size? OR a Lake-fringe wetland, if it does the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water within 3 mi of a large field or pasture (>40 a within 5 mi of a lake greater than 20 acres? WES = 1 point	bed and unbroken vegetated corridor le, has at least 30% cover of shrubs, forest aries, other wetlands or undisturbed <i>n riparian corridors, heavily used gravel</i> <i>corridor</i> ). NO = go to H 2.2.2 bed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 is not have an undisturbed corridor as in NO = H 2.2.3 r estuary OR	1

Total for page 2



<ul> <li>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)</li> <li>Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>These are DFW definitions. Check with your local DFW biologist if there are any questions.</li> <li><b>Riparian</b>: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li><b>Aspen Stands</b>: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</li> <li><b>Cliffs</b>: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li><b>Old-growth forests</b>: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</li> <li><b>Mature forests</b>: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in oldgrowth; 80 - 200 years old west of the Cascade crest.</li> <li><b>Prairies</b>: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</li> <li><b>Talus</b>: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</li> <li><b>Caves</b>: A naturally occurring cavity, recess, void, or system of interconnected passages</li> <li><b>Oregon white Oak</b>: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</li> <li><b>Urban Natural Open Space</b>: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open spac</li></ul>	
승규가 지수는 가장이 가장에 가지 않는 것을 가장 감독하는 것은 것을 하는 것이 것을 가지 않는 것이 같다. 이렇게 집에 가장에 가장에 가장에 가장이 있는 것이 같다.	
	1
The salinity may be periodically increased above that of the open ocean by evaporation.	1
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).	
If we than $3 \text{ or more}$ priority habitats = 4 points	
If we hand has 2 priority habitats = 3 points If we have $2 = 3 = 3 = 3 = 3 = 3 = 3 = 3 = 3 = 3 = $	
If we that 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)	

<b>Fotal Score for Habitat Functions</b> – add the points for	H 1. H 2 and record the result on	
	TOTAL for H 1 from page 14	3
	opportunity for providing habitat cores from H2.1,H2.2, H2.3, H2.4	6
<ul> <li>There are at least 3 other wetlands within ½ mile, BUT the disturbed</li> <li>The wetland is Lake-fringe on a lake with disturbance and wetland within ½ mile</li> <li>There is at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	points = 3	-
<ul> <li>best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the orelatively undisturbed (light grazing between wetlands boating, but connections should NOT be bisected by padevelopment.</li> <li>The wetland is Lake-fringe on a lake with little disturbance wetlands within ½ mile</li> </ul>	OK, as is lake shore with some wed roads, fill, fields, or other points = 5 ce and there are 3 other lake-fringe points = 5	3

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland R Date of site visit: 6/22/07
Rated by Greg Allington Trained by Ecology? Yes_No_X Date of training
SEC: 32 TWNSHP: 23NRNGE: IN Is S/T/R in Appendix D? Yes No
Map of wetland unit: Figure $App B$ Estimated size 0.07 acres
SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і\_ п\_ п\_ гу</u>Х

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



Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	X
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	

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		1
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		Х
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

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

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

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

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

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

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

NOJ 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)?

- go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
  - \_\_\_\_\_The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
    - \_\_\_\_The water leaves the wetland without being impounded?
      - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

(NO) go to 5 YES – The wetland class is Slope

5. 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.

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

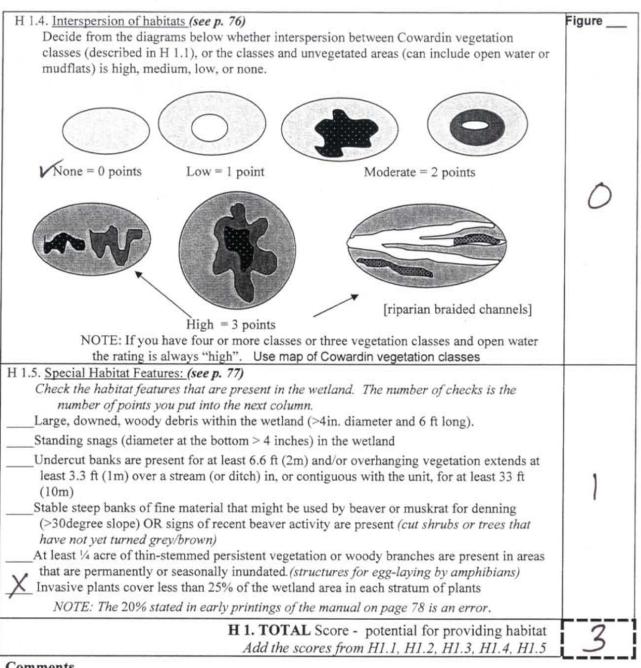
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
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:         Unit is a depression with no surface water leaving it (no outlet)       points = 3         Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2         Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1         Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1         (If ditch is not permanently flowing treat unit as "intermittently flowing")         Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation.</li> <li>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.</li> <li>Area seasonally ponded is &gt; ½ total area of wetland points = 4</li> <li>Area seasonally ponded is &gt; ¼ total area of wetland points = 2</li> </ul>	Figure
D	Area seasonally ponded is < 1/4 total area of wetland       points = 0         Map of Hydroperiods         Total for D 1       Add the points in the boxes above	5
D	<ul> <li>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.</li> <li>— Grazing in the wetland or within 150 ft</li> <li>✓ Untreated stormwater discharges to wetland</li> <li>— A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>— Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>— Wetland is fed by groundwater high in phosphorus or nitrogen</li> </ul>	(see p. 44) multiplier
D	YES         multiplier is 2         NO         multiplier is 1 <u>TOTAL</u> - Water Quality Functions         Multiply the score from D1 by D2           Add score to table on p. 1	10

Wetland name or number \_\_\_\_R

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential 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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 0	4
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet</i> <i>measure from the surface of permanent water or deepest part (if dry).</i> Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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	0
D	D 3.3 Contribution of wetland unit to storage in the watershed       points of         Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.       points = 5         The area of the basin is less than 10 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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.         <ul> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> <li>— Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul> </li> </ul>	(see p. 49) multiplier
	- Other	)
D	YES         multiplier is 2         NO         multiplier is 1           TOTAL - Hydrologic Functions         Multiply the score from D 3 by D 4           Add score to table on p. 1	4

These questions apply to wetlands of all A HABITAT FUNCTIONS - Indicators that unit fu		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential	to provide habitat for many	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as de class is <sup>1</sup> / <sub>4</sub> acre or more than 10% of the area if a Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >3 Forested (areas where trees have >30% of If the unit has a forested class check if:	unit is smaller than 2.5 acres. 30% cover)	hold for each	Figure
The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover 2	20% within the forested polygo		
Add the number of vegetation structures that qualif	<ul> <li><i>if you have:</i></li> <li>4 structures or more</li> <li>3 structures</li> <li>2 structures</li> <li><i>if you have:</i></li> <li><i>if you have:</i></li></ul>	points = 4 points = 2 points = 1 points = 0	
H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods regime has to cover more than 10% of the wetland descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types present 3 types present 2 types present 1 type present r adjacent to, the wetland	for points = 3 points = 2 point = 1 points = 0	Figure
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlan of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canar If you counted: List species below if you want to:	e size threshold)		



### Comments

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 product of 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 > 25% circumference. Points = 4 - 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 4 - 100 m (330 ft) 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. If the undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Ught to moderate grazing, or lawns are OK. Points = 3 - 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% 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 = 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 - 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 = 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 = 1 - Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tille		nany species:	
A Buffer does not meet any of the criteria above.Points = 1Aerial photo showing buffersH 2.2 Corridors and Connections (see p. 81)H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3)NO = go to H 2.2.2H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR	<ul> <li>iterion that applies to the wetland is to be used in the rating. See text for definition and isturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or ope of circumference. No structures are within the undisturbed part of buffer. undisturbed also means no-grazing, no landscaping, no daily human use)</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or ope 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or ope circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or ope circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or ope circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or ope 50% circumference.</li> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wet circumference. Light to moderate grazing, or lawns are OK.</li> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference tight to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> </ul>	highest scoring on of en water >95% (relatively Points = 5 en water > Points = 4 en water >95% Points = 4 en water >25% Points = 3 a water for > Points = 3 land > 95% Points = 2 e. Points = 1	Figure _
Aerial photo showing buffersH 2.2 Corridors and Connections (see p. 81)H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3)NO = go to H 2.2.2H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3)NO = H 2.2.3H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR	fields, paving, basalt bedrock extend to edge of wetland	Points = 0.	
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR		Points = 1	
within 3 mi of a large field or pasture (>40 acres) OR within $+\pi_{1}$ of a lake greater than 20 acres? YES = 1 point NO = 0 points	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated (either riparian or upland) that is at least 150 ft wide, has at least 30% cover o or native undisturbed prairie, that connects to estuaries, other wetlands or und uplands that are at least 250 acres in size? (dams in riparian corridors, heaving roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated (either riparian or upland) that is at least 50ft wide, has at least 30% cover of s forest, and connects to estuaries, other wetlands or undisturbed uplands that an acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed of the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within - The original of a lake greater than 20 acres?	f shrubs, forest isturbed <i>ly used gravel</i> corridor shrubs or re at least 25	

Total for page 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) $> 81$ cm (32 in) dbh or $> 200$ years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If we than $1$ 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)	

Wetland name or number \_\_\_\_\_

<b>Fotal Score for Habitat Functions</b> – add the points for H 1, H 2 and rec	rd the result on p. 1	9
TOTAL for H	1 from page 14	3
H 2. TOTAL Score - opportunity for p Add the scores from H2.1,1		6
<ul> <li>2.4 Wetland Landscape (choose the one description of the landscape around the best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connections between relatively undisturbed (light grazing between wetlands OK, as is lake shore boating, but connections should NOT be bisected by paved roads, fill, field development.</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 of wetlands within ½ mile</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections betweed disturbed</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other wetland within ½ mile</li> <li>There are at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	them are with some s, or other points = 5 her lake-fringe points = 5 en them are points = 3	3

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland 5-1 Date of site visit: 6/22/07
Rated by Greg Allington Trained by Ecology? Yes_No_X Date of training
SEC: 32 TWNSHP: 23 NRNGE: W Is S/T/R in Appendix D? Yes No
Map of wetland unit: Figure $Apple$ Estimated size <u>3,64</u> acres
SUMMARY OF RATING
Category based on FUNCTIONS provided by wetland IIIIIIX_IV
Category I = Score >=70Score for Water Quality Functions18Category II = Score 51-69Score for Hydrologic Functions7Category III = Score 30-50Score for Habitat Functions12
Category IV = Score < 30 TOTAL score for Functions $37$

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	No. of Lot.
Estuarine	Depressional	X
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	

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		~
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed</li> <li>Threatened or Endangered animal species?</li> <li>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).</li> </ul>		Х
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		×

# 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.

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## Classification of Wetland Units in Western Washington

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

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

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

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

- The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
  - NO- go to 3 YES The wetland class is Flats

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

- 3. Does the entire wetland unit meet both of the following criteria?
  - \_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
  - NO) go to 4 YES The wetland class is Lake-fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - \_\_\_\_The water leaves the wetland without being impounded?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

NO2 go to 5 YES – The wetland class is Slope

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

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

flooding from that stream or river

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

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

(NO) go to 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.

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

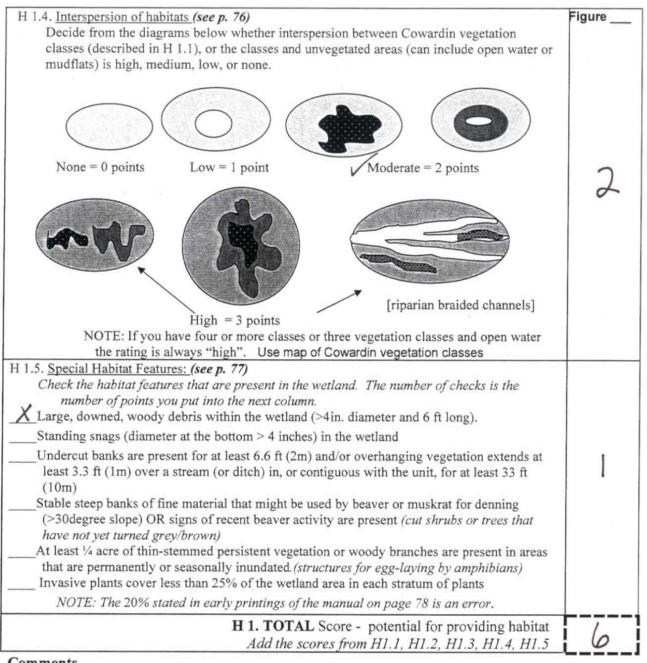
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 Map of Cowardin vegetation classes	Figure
D	D1.4 Characteristics of seasonal ponding or inundation.This is the area of the wetland unit that is ponded for at least 2 months, but dries outsometime during the year. Do not count the area that is permanently ponded. Estimatearea as the average condition 5 out of 10 yrs.Area seasonally ponded is > ½ total area of wetlandpoints = 4Area seasonally ponded is > ¼ total area of wetlandpoints = 2Area seasonally ponded is < ¼ total area of wetlandpoints = 0	Figure
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	9
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>X Tilled fields or orchards within 150 ft of wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> </ul>	
	Other     multiplier is 2     NO     multiplier is 1	2
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	18

Wetland name or number \_\_\_\_\_\_

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)		
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	(see p.46)		
D	<ul> <li>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</li> <li>Unit is a intermittently flowing, OR highly constricted permanently flowing outlet points = 2</li> <li>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</li> <li>(If ditch is not permanently flowing treat unit as "intermittently flowing")</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0</li> </ul>			
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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3. 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	5		
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0		
D	Total for D 3Add the points in the boxes above	7		
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply</i>. — 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</li> </ul>			
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier		
	- Other	1		
	YES multiplier is 2 (NO) multiplier is 1			
D	<b>TOTAL</b> - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1			

	functions to provide importan	t habitat	(only 1 st per bo
1. Does the wetland unit have the potential	to provide habitat for many	y species?	
1.1 Vegetation structure (see p. 72)			Figure _
Check the types of vegetation classes present (as a class is ¼ acre or more than 10% of the area is Aquatic bed Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have = Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strata moss/ground-cover) that each cover Add the number of vegetation structures that qual	<ul> <li>30% cover)</li> <li>cover)</li> <li>cover)</li> <li>cover)</li> <li>canopy, sub-canopy, shrubs, her</li> <li>20% within the forested polygo</li> </ul>	erbaceous,	1
Aud the number of vegetation structures that qual	4 structures or more	points = 4	
Man of Councilla userial	3 structures	points = 4 points = 2	
Map of Cowardin vegetation classes	$V_2$ structures	points = 1	
	1 structure	points = 0	
1.2. Hydroperiods (see p. 73)	- Constructiv	Pointo V	Figure
Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, Seasonally flowing stream in, or adjacen Lake-fringe wetland = 2 points			
<i>Freshwater tidal wetland</i> = 2 points	Map of hydr	operiods	
1.3. <u>Richness of Plant Species</u> (see p. 75)	and that cover at least 10 ft <sup>2</sup> . (dif	ferent patches	
of the same species can be combined to meet t You do not have to name the species. Do not include Eurasian Milfoil, reed cand If you counted List species below if you want to:	arygrass, purple loosestrife, Car	points = 2 $points = 1$ $points = 0$	1



### Comments

H 2. Does the wetland unit have the opportunity to	provide habitat for many species?	
H 2.1 <u>Buffers</u> (see p. 80) Choose the description that best represents condition of bu criterion that applies to the wetland is to be used in the rat "undisturbed."		Figure
<ul> <li>100 m (330ft) of relatively undisturbed vegetated a of circumference. No structures are within the un undisturbed also means no-grazing, no landscaping</li> <li>100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated at circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated at circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated at circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated at circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated at circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated at 50% circumference.</li> <li>If buffer does not meet any of the structure of the</li></ul>	disturbed part of buffer. (relatively g, no daily human use) Points = 5 areas, rocky areas, or open water > Points = 4 reas, rocky areas, or open water >95% Points = 4 areas, rocky areas, or open water > 25% Points = 3 reas, rocky areas, or open water for > Points = 3 the criteria above within 25 m (80ft) of wetland > 95% as are OK. Points = 2 If for >50% circumference. Points = 1 an 95% of the circumference (e.g. tilled	I
<ul> <li>H 2.2 Corridors and Connections (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturbed (either riparian or upland) that is at least 150 ft wide, or native undisturbed prairie, that connects to estuarie uplands that are at least 250 acres in size? (dams in r roads, paved roads, are considered breaks in the corr YES = 4 points (go to H 2.3)</li> <li>H 2.2.2 Is the wetland part of a relatively undisturbed (either riparian or upland) that is at least 50ft wide, ha forest, and connects to estuaries, other wetlands or un acres in size? OR a Lake-fringe wetland, if it does n the question above?</li> <li>YES = 2 points (go to H 2.3)</li> <li>H 2.2.3 Is the wetland:</li> <li>within 5 mi (8km) of a brackish or salt water e within 3 mi of a large field or pasture (&gt;40 acres)</li> </ul>	and unbroken vegetated corridor has at least 30% cover of shrubs, forest es, other wetlands or undisturbed <i>iparian corridors, heavily used gravel</i> <i>ridor</i> ). NO = go to H 2.2.2 and unbroken vegetated corridor as at least 30% cover of shrubs or disturbed uplands that are at least 25 to thave an undisturbed corridor as in NO = H 2.2.3	1

<ul> <li>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)</li> <li>Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>These are DFW definitions. Check with your local DFW biologist if there are any questions.</li> <li>Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li>Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</li> <li>Cliffis: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li>Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) ≥ 81 cm (32 in) dbh or &gt; 200 years of age.</li> <li>Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; 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.</li> <li>Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</li> <li>Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</li> <li>Caves: A naturally occurring cavity, recess, void, or system of interconnected passages Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</li> <li>Urban Natural Open Space: A priority shabitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural</li></ul>	
beaches, and may also include the backshore and adjacent components of the terrestrial	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point 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         V       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         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 are no wetlands within ½ mile.       Points = 2         There are no wetlands within ½ mile.       Points = 0	3
<b>H 2</b> . TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 14	6
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	12

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland 5-2. Date of site visit: 6/21/07
Rated by Greg Allington Trained by Ecology? Yes No X Date of training
SEC: 32 TWNSHP: 23N RNGE: W Is S/T/R in Appendix D? Yes No X
Map of wetland unit: Figure AppB Estimated size

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п ш іў Х</u>

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

4	
2	
9	
15	

Category based on SPECIAL CHARACTERISTICS of wetland

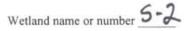
I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	ane)
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	X
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	Γ



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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?		X
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\wedge$
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?		$\times$
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.

Wetland name or number 5-2

## Classification of Wetland Units in Western Washington

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

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

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

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

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

NO)- go to 3 YES – The wetland class is Flats

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

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

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

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

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

X 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.

3

X The water leaves the wetland without being impounded?

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

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

5. 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.* 

NOJ go to 7 YES – The wetland class is Depressional

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

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

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

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

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

S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit:         Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)         Slope is 1% - 2%         Slope is 2% - 5%         Slope is greater than 5%	7
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES = 3 points	0
S	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.</li> <li>Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3 Dense, woody, vegetation &gt; 1/2 of area points = 1</li> <li>Dense, uncut, herbaceous vegetation &gt; 1/4 of area points = 1</li> <li>Does not meet any of the criteria above for vegetation polygons</li> </ul>	Figure
s	Total for S 1     Add the points in the boxes above	2
S	<b>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>	(see p.67)
	<ul> <li>Grazing in the wetland or within 150ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier
s	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	4

Comments

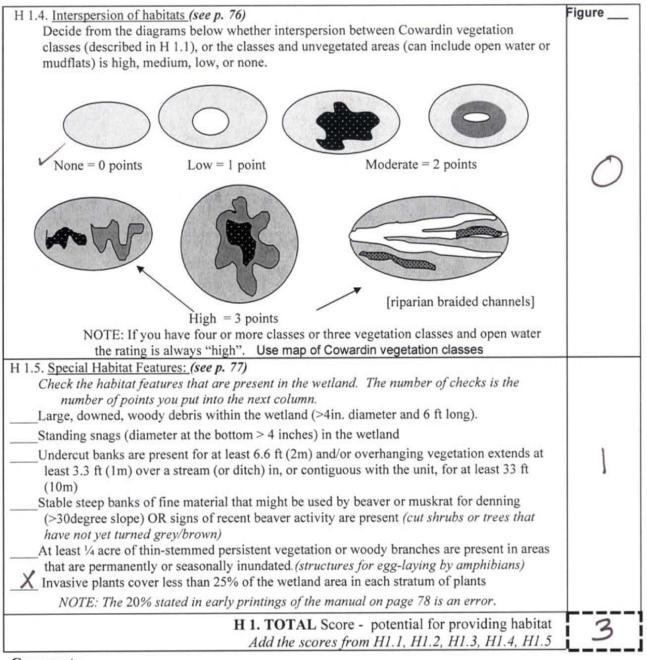
S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. points = 6 Dense, uncut, rigid vegetation > 1/2 area of wetland Dense, uncut, rigid vegetation > 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is	0
s	not rigid       points = 0         S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows:         The slope wetland has small surface depressions that can retain water over at least 10% of its area.	2
	NO points = 0	+ <u>-</u>
S	Add the points in the boxes above	2
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.</li> <li>— Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>	(see p. 70)
	problems — Other	multiplier
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 (NO) multiplier is 1	<u> </u>
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	2

Comments

Wetland name or number 5-2

These questions apply to wetlands of all H HABITAT FUNCTIONS - Indicators that unit fu		habitat	Points (only 1 scon per box)
H 1. Does the wetland unit have the potential t	o provide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if u Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >3	fined by Cowardin)- Size thresh init is smaller than 2.5 acres.		Figure
Forested (areas where trees have >30% c If the unit has a forested class check if: The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover 2 Add the number of vegetation structures that qualify	cover) canopy, sub-canopy, shrubs, he 20% within the forested polygon	ı	0
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
<ul> <li>1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperiods regime has to cover more than 10% of the wetlan descriptions of hydroperiods)</li> <li>Permanently flooded or inundated</li> <li>Seasonally flooded or inundated</li> <li>X Occasionally flooded or inundated</li> <li>Saturated only</li> <li>Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent</li> <li>Lake-fringe wetland = 2 points</li> </ul>	4 or more types present 3 types present 2 types present 1 type present r adjacent to, the wetland	for	Figure
Freshwater tidal wetland = 2 points Freshwater tidal wetland = 2 points 11.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlan of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canan If you counted: List species below if you want to:	e size threshold)	ferent patches	1
		Total for	1

August 2004



### Comments

I 2. Does the wetland unit have the opportunity to provide habitat for many species?	
2.1 <u>Buffers</u> (see p. 80)	Figure
Thoose the description that best represents condition of buffer of wetland unit. The highest scoring riterion that applies to the wetland is to be used in the rating. See text for definition of undisturbed. " 100  m (2200) of relatively undisturbed vecetored energy really group or open vector $> 05%$	
<ul> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;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</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference, Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference. Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> <li>S0 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> <li>Mo paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>Heavy grazing in buffer. Points = 1</li> <li>Vegetated buffers are &lt;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.</li> </ul>	1
$X = \frac{1}{2}$ Buffer does not meet any of the criteria above. Points = 0. Points = 1	
Aerial photo showing buffers	
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? ( <i>dams in riparian corridors, heavily used gravel</i> roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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?	1
YES = 2 points (go to H 2.3)NO = H 2.2.3H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? $(YES = 1 point$ NO = 0 points	

Total for page 2

<ul> <li>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)</li> <li>Which of the following priority habitats are within 330f (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>These are DFW definitions. Check with your local DFW biologist if there are any questions.</li> <li>Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li>Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</li> <li>Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li>Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</li> <li>Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; 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 of west of the Cascade crest.</li> <li>Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</li> <li>Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine taillings. May be associated with eliffs.</li> <li>Caves: A naturally pone Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space: an oil surrounded by urban development.</li> <li>✓ Urban Natural Open Space: A ripriori</li></ul>	1

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 <b>H 2.</b> TOTAL Score - opportunity for providing habitat		disturbed The wetland is Lake-fringe on a lake <b>with</b> disturbance and there wetland within <sup>1</sup> / <sub>2</sub> mile There is at least 1 wetland within <sup>1</sup> / <sub>2</sub> mile.	points = 3 are 3 other lake-fringe points = 3 points = 2 points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	I within $\frac{1}{2}$ milepoints = 3at least 1 wetland within $\frac{1}{2}$ mile.points = 2		tunity for providing habitat	

WETLAND RATING FORM – WESTERN Version 2 - Updated July 2006 to increase accuracy and repr	
Name of wetland (if known): Wetland T	Date of site visit: 6/22/07
Rated by Greg Allington Trained by Ecology?	Yes_NoX Date of training
SEC: 32-TWNSHP: 23N RNGE: 1W Is S/T/R in Appendix D	D? YesNoX
Map of wetland unit: Figure App B Estima	ated size 0,23 acres

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п п тх х</u>

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

10
4
9
23

**TOTAL score for Functions** 

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	Star P
Estuarine	Depressional	X
Natural Heritage Wetland	Riverine	1
Bog	Lake-fringe	
Mature Forest	Slope	
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	1
Interdunal		
None of the above	Check if unit has multiple HGM classes present	Γ

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		X
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\sim$
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		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.		×

# 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

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

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

- 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.
  - SO2 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)

- 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).
  - go to 5 YES The wetland class is Slope

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

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

The overbank flooding occurs at least once every two years.

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

NO - go to 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 **(ES)** 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.

NO2 go to 8 YES - The wetland class is Depressional

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

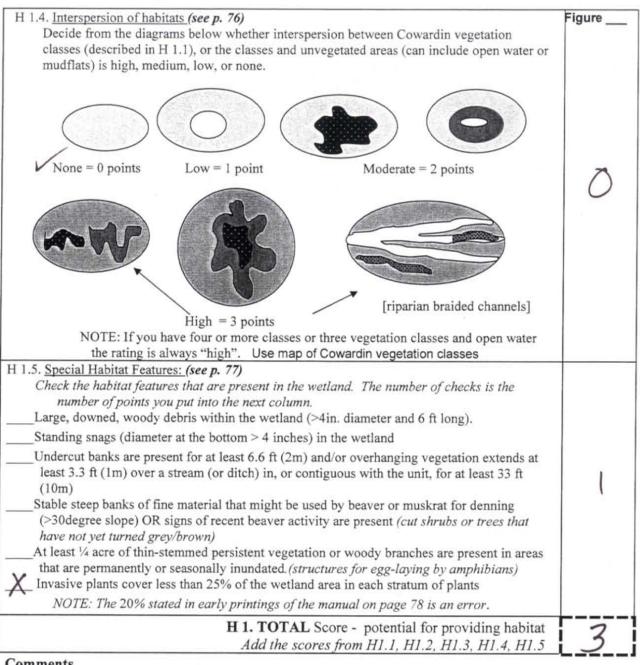
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)		
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: 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 ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing			
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 VNO points = 0	0		
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure		
D	D1.4 Characteristics of seasonal ponding or inundation.         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.         Area seasonally ponded is > ½ total area of wetland       points = 4         Area seasonally ponded is > ¼ total area of wetland       points = 2         Area seasonally ponded is < ¼ total area of wetland       points = 0	Figure		
D	Map of Hydroperiods           Total for D 1         Add the points in the boxes above			
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li></ul>	(see p. 44) multiplier		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10		

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)	
	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 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3. 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	0	
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 points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	0	
D	Total for D 3Add the points in the boxes above	4	
D	<ul> <li>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.         <ul> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> </ul> </li> </ul>		
	flow into a river or stream that has flooding problems	multiplier	
	- Other YES multiplier is 2 NO multiplier is 1	)	
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	4	

These questions apply to wetlands of all IABITAT FUNCTIONS - Indicators that unit for		nt habitat	Points (only 1 so per bo
1. Does the wetland unit have the potential			
11.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as declass is ¼ acre or more than 10% of the area if Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30%)	efined by Cowardin)- Size thre unit is smaller than 2.5 acres. 30% cover)		Figure _
If the unit has a forested class check if: The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover Add the number of vegetation structures that quality Map of Cowardin vegetation classes	20% within the forested polyg		0
	2 structures	points = 1 points = 0	
Check the types of water regimes (hydroperiod regime has to cover more than 10% of the wetlan descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, o Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points	4 or more types prese 3 types presen 2 types presen 1 type present r adjacent to, the wetland to, the wetland	$\begin{array}{ll} \text{for} \\ \text{nt} & \text{points} = 3 \\ \text{t} & \text{points} = 2 \\ \text{t} & \text{point} = 1 \\ \text{points} = 0 \end{array}$	L
Freshwater tidal wetland = 2 points 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlar of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed canan If you counted: List species below if you want to:	e size threshold)	ifferent patches	
		Total for p	2



## Comments

<ul> <li>H 2.1 <u>Buffers</u> (see p. 80)</li> <li>Choose the description that best represents condition of buffer of wetland unit. The criterion that applies to the wetland is to be used in the rating. See text for definit "undisturbed."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or of of circumference. No structures are within the undisturbed part of buffer undisturbed also means no-grazing, no landscaping, no daily human use)</li> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or of 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or of circumference.</li> </ul>	ition of open water >95% er. (relatively ) Points = 5 open water > Points = 4	Figure
<ul> <li>Choose the description that best represents condition of buffer of wetland unit. The criterion that applies to the wetland is to be used in the rating. See text for definit "undisturbed."</li> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or of of circumference. No structures are within the undisturbed part of buffer undisturbed also means no-grazing, no landscaping, no daily human use)</li> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or of 50% circumference.</li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or of the set of the s</li></ul>	ition of open water >95% er. (relatively ) Points = 5 open water > Points = 4	
<ul> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or of circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or of 50% circumference.         If buffer does not meet any of the criteria above         No paved areas (except paved trails) or buildings within 25 m (80ft) of w circumference. Light to moderate grazing, or lawns are OK.         No paved areas or buildings within 50m of wetland for &gt;50% circumfere Light to moderate grazing, or lawns are OK.         Heavy grazing in buffer.         Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumfere Light does not meet any of the criteria above.         Aerial photo showing buffers     </li> </ul>	Points = 4 $points = 3$ $points = 3$ $points = 3$ $Points = 3$ $vetland > 95%$ $Points = 2$ $ence.$ $Points = 2$ $Points = 1$ ference (e.g. tilled Points = 0. $Points = 1$	)
H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetat (either riparian or upland) that is at least 150 ft wide, has at least 30% cover or native undisturbed prairie, that connects to estuaries, other wetlands or un- uplands that are at least 250 acres in size? (dams in riparian corridors, hear roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetat (either riparian or upland) that is at least 50ft wide, has at least 30% cover of forest, and connects to estuaries, other wetlands or undisturbed uplands that acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 3 mi of a lake greater than 20 acres? (YES = 1 point NO = 0 points	ted corridor r of shrubs, forest indisturbed <i>avily used gravel</i> 2.2 ted corridor of shrubs or t are at least 25	)

Total for page 2

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
	connections do not have to be relatively undisturbed.	
	These are DFW definitions. Check with your local DFW biologist if there are any questions.	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
	forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
	trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
	may be less that 100%; 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-	
I	growth; 80 - 200 years old west of the Cascade crest.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
l	grasses and/or forbs form the natural climax plant community.	
l	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
I	tailings. May be associated with cliffs.	1
I	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
l	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	1
l	canopy coverage of the oak component of the stand is 25%.	
l	Urban Natural Open Space: A priority species resides within or is adjacent to the open	
l	space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
	corridor connecting other priority habitats, especially those that would otherwise be	
l	isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
	X acres) and is surrounded by urban development.	
l	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
	enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
	in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
	The salinity may be periodically increased above that of the open ocean by evaporation.	
	Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
	habitat extends upstream and landward to where ocean-derived salts measure less than	
	0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial	
	landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
	associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
	recruitment, nutrient contribution, erosion control).	
	If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
	If wetland has 2 priority habitats = 3 points	
	If we thank 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)	
Ļ.		

16

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that	
In the intervention of the one description of the transcupe droma the wethand that         best fits) (see p. 84)         There are at least 3 other wetlands within ½ mile, and the connections between them are         relatively undisturbed (light grazing between wetlands OK, as is lake shore with some         boating, but connections should NOT be bisected by paved roads, fill, fields, or other         development.       points = 5         The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe         wetlands within ½ mile       points = 5         There are at least 3 other wetlands within ½ mile, BUT the connections between them are         disturbed       points = 3         The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe         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
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 14	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	9

WETLAND RATI	NG FORM – WESTERN	WASHINGTON
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Version 2 - Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Wetland U Date of site visit: 6/22/07	-
Rated by Greg Allington Trained by Ecology? Yes No X Date of training	
SEC: 32 TWNSHP: 23NRNGE: W Is S/T/R in Appendix D? Yes_ No X	
Map of wetland unit: Figure App B Estimated size 0.05 acres	

## SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

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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	Funct	ions
-------	-------	-----	-------	------

10	
4	
9	
23	

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	1
Estuarine	Depressional	X
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	1
Mature Forest	Slope	
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal	-	
None of the above	Check if unit has multiple HGM classes present	Γ

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\wedge$
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> 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?		Х
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

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

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

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

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

- 2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
  - NO2 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)?
  - NOA go to 4 **YES** The wetland class is **Lake-fringe** (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - \_\_\_\_\_The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - \_\_\_\_The water leaves the wetland without being impounded?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually
  - <3ft diameter and less than 1 foot deep).
  - NO go to 5 YES The wetland class is Slope

5. 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 **XES** 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.

(NQ<sup>2</sup> go to 8 YES – The wetland class is Depressional.

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

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

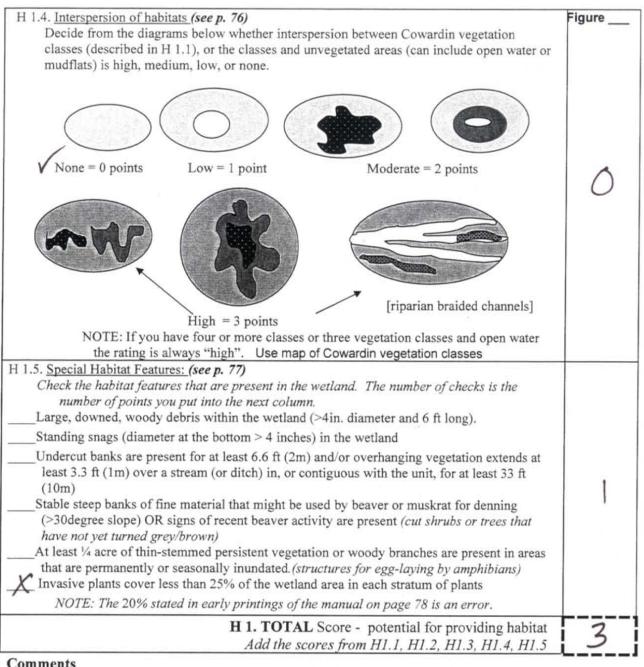
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

4

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)	
	improve water quality	(see p.38)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?		
D	D 1.1 Characteristics of surface water flows out of the wetland: V 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 ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	Figure	
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i>	0	
	YES $points = 4$ NO $points = 0$	<u> </u>	
		Figure	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)         Wetland has persistent, ungrazed, vegetation >= 95% of area         Wetland has persistent, ungrazed, vegetation >= 1/2 of area         points = 3	Figure	
	Wetland has persistent, ungrazed vegetation >= 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	0	
	D1.4 Characteristics of seasonal ponding or inundation.	Figure	
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. Area seasonally ponded is > ½ total area of wetland points = 4	2	
	Area seasonally ponded is $> \frac{1}{4}$ total area of wetland Area seasonally ponded is $< \frac{1}{4}$ total area of wetland Area seasonally ponded is $< \frac{1}{4}$ total area of wetland Map of Hydroperiods	~	
D	Total for D 1       Add the points in the boxes above	5	
	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?		
D	<ul> <li>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.</li> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields or orchards within 150 ft of wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li></ul>	(see p. 44) multiplier 2	
_	<b>VES</b> multiplier is 2 NO multiplier is 1		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10	

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D	D3:1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 outlet	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         V The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply.</i> — 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</li> </ul>	(see p. 49)
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier
	- Other YES multiplier is 2 NO multiplier is 1	_/
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	4

e habitat for man e habitat for man Cowardin)- Size three aller than 2.5 acres. (-) ub-canopy, shrubs, 1 in the forested polyg have: ructures or more tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures tructures	ny species? eshold for each herbaceous, ton points = 4 points = 2 points = 1 points = 0 The water	Figure _
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2	eshold) urple loosestrife, Co > 19 species 5 - 19 species	urple loosestrife, Canadian Thistle > 19 species points = 2 5 - 19 species points = 1



#### Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	1 all the	
H 2.1 Buffers (see p. 80)	Figure	
<ul> <li>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."</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;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</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>00 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 4</li> <li>00 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 4</li> <li>00 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> <li>Muffer does not meet any of the criteria above</li> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt;95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 1</li> <li>Vegetated buffers are &lt;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. Points = 1</li> <li>Aerial photo showing buffers</li> </ul>	)	
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? NO = 0 points	J	

Total for page 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82) Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres). Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; 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 oldgrowth; 80 - 200 years old west of the Cascade crest. Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft). composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. Caves: A naturally occurring cavity, recess, void, or system of interconnected passages Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other priority habitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. X Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semienclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons. Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control). If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point 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)

Wetland name or number  $\underline{V}$ 

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84) There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3	3
wetland within $\frac{1}{2}$ milepoints = 3There is at least 1 wetland within $\frac{1}{2}$ mile.points = 2There are no wetlands within $\frac{1}{2}$ mile.points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 14	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	9

17

August 2004

WETLAND RATING FORM – WESTERN WA Version 2 - Updated July 2006 to increase accuracy and reproducible	
Name of wetland (if known): Wetland V	Date of site visit: 6/22/07
Rated by Greg Allington Trained by Ecology? Yes_	No $X$ Date of training
SEC: 32 TWNSHP: 23N RNGE: 1W Is S/T/R in Appendix D? Ye	sNo_X
Map of wetland unit: Figure App B Estimated s	size <u>0,19 acces</u>

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

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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

10
5
10
25

**TOTAL score for Functions** 

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply\_X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	X
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	

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\wedge$
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		Х
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
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

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

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

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

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

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

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

NO-go to 3 YES – The wetland class is Flats

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

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

\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

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

- 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).</p>

3

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 **XES** The wetland class is **Depressional** 

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

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

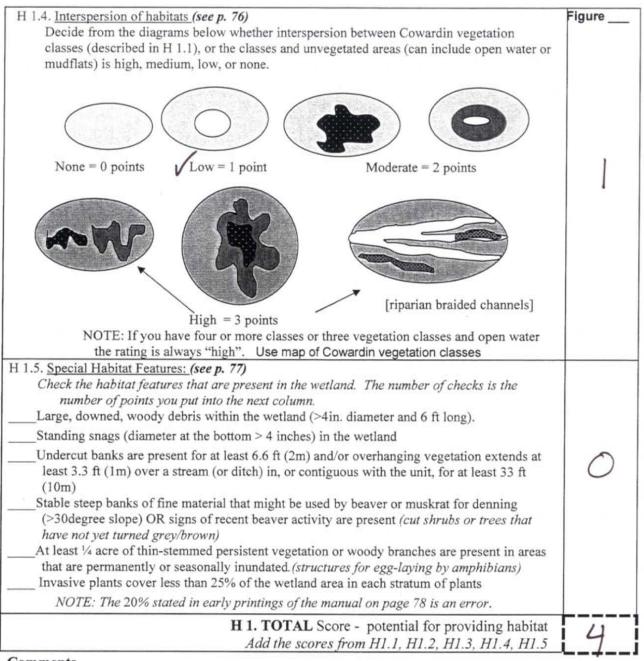
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
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: 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 ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)         Wetland has persistent, ungrazed, vegetation > = 95% of area       points = 5         Wetland has persistent, ungrazed, vegetation > = 1/2 of area       points = 3         Wetland has persistent, ungrazed vegetation > = 1/10 of area       points = 1         Wetland has persistent, ungrazed vegetation <1/td>       > = 1/10 of area       points = 0         Metland has persistent, ungrazed vegetation <1/td>       > = 1/10 of area       points = 0	Figure
D	D1.4 Characteristics of seasonal ponding or inundation.         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.         Area seasonally ponded is > ½ total area of wetland       points = 4         Area seasonally ponded is > ¼ total area of wetland       points = 2         Area seasonally ponded is < ¼ total area of wetland       points = 0         Map of Hydroperiods       Map of Hydroperiods	Figure
D	Total for D 1       Add the points in the boxes above	5
D	<ul> <li>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.</li> <li>— Grazing in the wetland or within 150 ft</li> <li>— Untreated stormwater discharges to wetland</li> <li>Tilled fields or orchards within 150 ft of wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>— Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>— Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other multiplier is 2 NO multiplier is 1</li> </ul>	(see p. 44) multiplier
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)	
	D 3. Does the wetland unit have the potential 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 Unit is a mintermittently 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 <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 0	2	
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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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       points = 0         Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.       points = 5         The area of the basin is less than 10 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0	
D	Total for D 3Add the points in the boxes above	5	
D	<ul> <li>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. <i>Note which of the following indicators of opportunity apply.</i> — 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</li> </ul>		
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier	
	- Other YES multiplier is 2 (NO) multiplier is 1	1	
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	5	

1 Does the wetland unit have the note-ti-le	o provido habitat for	t habitat	
<b>I 1. Does the wetland unit have the <u>potential</u> 1 I 1.1 <u>Vegetation structure</u> (see p. 72)</b>	to provide habitat for many	species?	Figure
Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if a Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >3 Forested (areas where trees have >30% of	unit is smaller than 2.5 acres.	hold for each	Figure _
If the unit has a forested class check if: The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover 2	20% within the forested polygo		
Add the number of vegetation structures that qualify	v. If you have:		
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1	
1.2. Hydroperiods (see p. 73)	1 structure	points = 0	Figure
descriptions of hydroperiods)Permanently flooded or inundated	4 or more types present		
Seasonally flooded or inundated Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	3 types present 2 types present 1 type present adjacent to, the wetland	points = 2 $point = 1$ $points = 0$	



### Comments

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 > 25% circumference. Points = 4 — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 4 — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 4 — 100 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 3 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 5% circumference. Light to moderate grazing, or lawns are OK. Points = 3 — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — Heavy grazing in buffer. Points = 0 (6.6ft) for more than 95% of the circumference (e.g. tilled ftelds, paving, basalt bedrock extend to edge of wetland Points = 0. Buffer does not meet any of the criteria above. Points = 1 <b>Y</b> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled ftelds, paving, basalt bedrock extend to edge of wetland Points = 0. Buffer does not meet any of the criteria above. Points = 1 <b>Y</b> 2.2 <u>Corridors and Connections (see p. 81)</u> 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 wi	2. Does the wetland unit have the opportunity	y to provide habitat for many species?	101
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 > 25% 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 > 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         90 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference.       Points = 3         90 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference.       Points = 3         90 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.         90 mits = 1       Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled	hoose the description that best represents condition of iterion that applies to the wetland is to be used in the undisturbed." — 100 m (330ft) of relatively undisturbed vegetate	erating. See text for definition of ed areas, rocky areas, or open water >95%	Figure
H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? ( <i>dams in riparian corridors, heavily used gravel</i> roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR	<ul> <li>undisturbed also means no-grazing, no landscap</li> <li>100 m (330 ft) of relatively undisturbed vegetate 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetate circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetate circumference, .</li> <li>50 m (170ft) of relatively undisturbed vegetate 50% circumference.</li> <li>If buffer does not meet any</li> <li>No paved areas (except paved trails) or building circumference. Light to moderate grazing, or la</li> <li>No paved areas or buildings within 50m of weth Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of Buffer does not meet any of the criteria above.</li> </ul>	ping, no daily human use) Points = 5 ted areas, rocky areas, or open water > Points = 4 ed areas, rocky areas, or open water >95% Points = 4 ed areas, rocky areas, or open water > 25% Points = 3 ed areas, rocky areas, or open water for > Points = 3 of the criteria above gs within 25 m (80ft) of wetland > 95% awns are OK. Points = 2 land for >50% circumference. Points = 1 re than 95% of the circumference (e.g. tilled Wetland Points = 0. Points = 1	l
within $+$ mi of a lake greater than 20 acres? (YES) = 1 point NO = 0 points	<ul> <li>H 2.2 <u>Corridors and Connections</u> (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undistur (either riparian or upland) that is at least 150 ft wi or native undisturbed prairie, that connects to estu uplands that are at least 250 acres in size? (dams roads, paved roads, are considered breaks in the or YES = 4 points (go to H 2.3)</li> <li>H 2.2.2 Is the wetland part of a relatively undistur (either riparian or upland) that is at least 50ft wide forest, and connects to estuaries, other wetlands or acres in size? OR a Lake-fringe wetland, if it dot the question above? YES = 2 points (go to H 2.3)</li> <li>H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt wat within 3 mi of a large field or pasture (&gt;40 within 4 mi of a lake greater than 20 acres?</li> </ul>	The field and unbroken vegetated corridor ide, has at least 30% cover of shrubs, forest haries, other wetlands or undisturbed <i>in riparian corridors, heavily used gravel</i> <i>corridor</i> ). NO = go to H 2.2.2 The and unbroken vegetated corridor e, has at least 30% cover of shrubs or r undisturbed uplands that are at least 25 es not have an undisturbed corridor as in NO = H 2.2.3 there estuary OR acres) OR	1

Total for page 2

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82) Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other <i>priority habitats</i> , especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
acres) and is surrounded by urban development.	
Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons. Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
If we than $has 2$ priority habitats = 3 points	
If we than $1 \text{ priority habitat} = 1 \text{ point}$ 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 guestion H 2.4)	

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile</li> </ul>	3
There is at least 1 wetland within $\frac{1}{2}$ mile.points = 2There are no wetlands within $\frac{1}{2}$ mile.points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 14	4
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	10

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Name of wetland (if known): Wetland W Date of site visit: 6/22/07
Rated by Greg Allington Trained by Ecology? Yes_No X Date of training
SEC: 37 TWNSHP: 23NRNGE: W Is S/T/R in Appendix D? Yes No X
Map of wetland unit: Figure App B Estimated size 0.03 acres
SUMMARY OF RATING
Category based on FUNCTIONS provided by wetland
Score for Water Quality Functions

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

10
4
9
23

Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	Constanting of the second
Estuarine	Depressional	X
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

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		V
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		$\times$
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		X
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.		×

## 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.

Wetland name or number

## **Classification of Wetland Units in Western Washington**

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

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

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

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

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

 $NO \neq go to 3$ 

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)?
  - 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).

go to 5 YES - The wetland class is Slope

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

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

flooding from that stream or river

The overbank flooding occurs at least once every two years.

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

NO - go to 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.

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

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	D 1. Does the wetland unit have the potential to improve water quality?	(see p.38)
D	D 11 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS	
D	definitions) YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)         Wetland has persistent, ungrazed, vegetation > = 95% of area       points = 5         Wetland has persistent, ungrazed, vegetation > = 1/2 of area       points = 3         Wetland has persistent, ungrazed vegetation > = 1/10 of area       points = 1         Wetland has persistent, ungrazed vegetation > = 1/10 of area       points = 1         Wetland has persistent, ungrazed vegetation <1/10 of area       points = 0	Figure
	Map of Cowardin vegetation classes	
D	D1.4 Characteristics of seasonal ponding or inundation.This is the area of the wetland unit that is ponded for at least 2 months, but dries outsometime during the year. Do not count the area that is permanently ponded. Estimatearea as the average condition 5 out of 10 yrs.Area seasonally ponded is > ½ total area of wetlandPoints = 4Area seasonally ponded is > ¼ total area of wetlandpoints = 2Area seasonally ponded is < ¼ total area of wetlandpoints = 0	Figure
	Map of Hydroperiods	
D	Total for D 1Add the points in the boxes above	5
D	<ul> <li>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. — Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other</li></ul>	(see p. 44) multiplier
	YES multiplier is 2 NO multiplier is 1	0
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	10

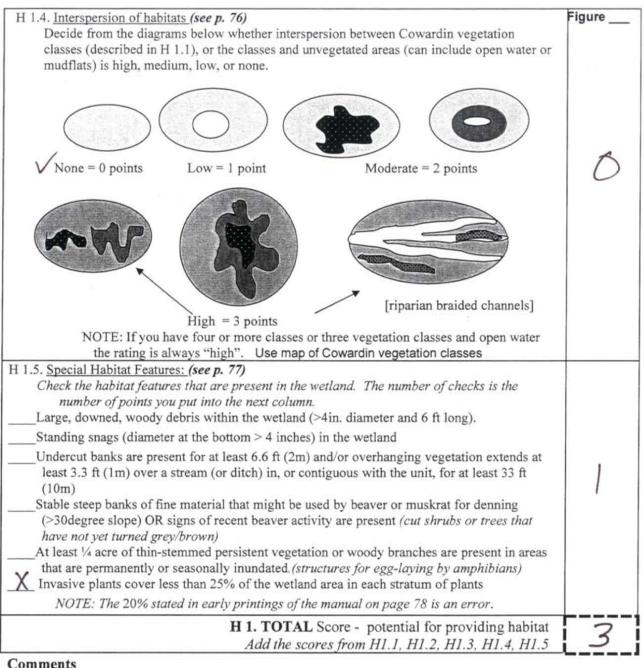
D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	(see p.46)
D	D 3A Characteristics of surface water flows out of the wetland unit Vunit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) 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 points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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	0
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       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 3         The area of the basin is more than 100 times the area of the unit       points = 0         Entire unit is in the FLATS class       points = 5	0
D	Total for D 3Add the points in the boxes above	4
D	<ul> <li>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. <ul> <li>Wetland is in a headwater of a river or stream that has flooding problems</li> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems </li> </ul></li></ul>	(see p. 49) multiplier
	- Other YES multiplier is 2 (NO) multiplier is 1	]
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	4

6

August 2004

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

These questions apply to wetlands of all HABITAT FUNCTIONS - Indicators that unit f		habitat	Points (only 1 scor per box)
H 1. Does the wetland unit have the potential	to provide habitat for many	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as d class is ¼ acre or more than 10% of the area if Aquatic bed <u>X</u> Emergent plants	unit is smaller than 2.5 acres.	old for each	Figure
Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strata moss/ground-cover) that each cover Add the number of vegetation structures that qualij	cover) (canopy, sub-canopy, shrubs, her 20% within the forested polygor		0
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
H 1.2. Hydroperiods (see p. 73) Check the types of water regimes (hydroperiod regime has to cover more than 10% of the wetla descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, o Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types present 3 types present 1 type present 1 type present 4 or more types present 2 types present 1 type present	points = 3 points = 2 point = 1 points = 0	Figure
I 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlar of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canal If you counted: List species below if you want to:	ne size threshold) rygrass, purple loosestrife, Cand > 19 species \$\$ - 19 species		J



#### Comments

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 test for definition of "undisturbed." $-100 \text{ m} (330 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5 -100 \text{ m} (330 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water > 55% circumference. Points = 4 -50 \text{ m} (170 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 4 -100 \text{ m} (330 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 4 -50 \text{ m} (170 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 3 -50 \text{ m} (170 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water > 55% circumference. Points = 3 -50 \text{ m} (170 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Using the moderate grazing, or lawns are OK. Points = 3 -100 \text{ m} (320 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water > 5% circumference. Light to moderate grazing, or lawns are OK. Points = 2 -100 \text{ m} \text{ opoints = 4} -100 \text{ m} (320 \text{ ft}) \text{ or lawns are OK} \text{ Points = 1} -100 \text{ Vegetated buffers are <2m wide (6.6 \text{ ft}) for more than 95% of the circumference (e.g. tilled ftels, paving, basalt bedrock extend to edge of wetland Points = 0. Points = 1 -100 \text{ Vegetated buffers are <2m wide (6.6 \text{ ft}) for more twalends or undisturbed uplates that are at least 150 ft wide, has at least 30% cover of shrubs, forest or antive undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplates that are at least 250 acres in s$	2. Does the wetland unit have the opportunity	to provide habitat for many species?	
Aerial photo showing buffersH 2.2 Corridors and Connections (see p. 81)H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3)WES = 4 points (go to H 2.3)NO = go to H 2.2.2H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3)NO = H 2.2.3H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR	<ul> <li>iterion that applies to the wetland is to be used in the randisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetates of circumference. No structures are within the rundisturbed also means no-grazing, no landscapt.</li> <li>100 m (330 ft) of relatively undisturbed vegetates 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated 50% circumference.</li> <li>No paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or laws are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more fields, paving, basalt bedrock extend to edge of vertices.</li> </ul>	rating. See text for definition of d areas, rocky areas, or open water >95% undisturbed part of buffer. (relatively ing, no daily human use) Points = 5 ed areas, rocky areas, or open water > Points = 4 d areas, rocky areas, or open water >95% Points = 4 d areas, rocky areas, or open water >25% Points = 3 d areas, rocky areas, or open water for > Points = 3 d areas, rocky areas, or open water for > Points = 3 of the criteria above s within 25 m (80ft) of wetland > 95% wns are OK. Points = 2 and for >50% circumference. Points = 1 than 95% of the circumference (e.g. tilled wetland Points = 0.	Figure _
within 1 mi of a lake greater than 20 acres? (YES)= 1 point NO = 0 points	Aeria H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturble (either riparian or upland) that is at least 150 ft widd or native undisturbed prairie, that connects to estual uplands that are at least 250 acres in size? (dams in roads, paved roads, are considered breaks in the con- YES = 4 points (go to H 2.3) H 2.2.2 Is the wetland part of a relatively undisturble (either riparian or upland) that is at least 50ft wide, forest, and connects to estuaries, other wetlands or acres in size? OR a Lake-fringe wetland, if it does the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water within 3 mi of a large field or pasture (>40 a within 1 mi of a lake greater than 20 acres?	al photo showing buffers bed and unbroken vegetated corridor le, has at least 30% cover of shrubs, forest uries, other wetlands or undisturbed <i>n riparian corridors, heavily used gravel</i> <i>orridor</i> ). NO = go to H 2.2.2 bed and unbroken vegetated corridor has at least 30% cover of shrubs or undisturbed uplands that are at least 25 s not have an undisturbed corridor as in NO = H 2.2.3 r estuary OR acres) OR	)

Total for page \_\_\_\_

Wetland name or number \_\_\_\_

J	THE A A VECTOR OF THE OWNER AND A DECEMPTOR A	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
	connections do not have to be relatively undisturbed.	
	These are DFW definitions. Check with your local DFW biologist if there are any questions.	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
I	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
1	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species,	
	forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
I	trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
l	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
I	may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
l	snags, and quantity of large downed material is generally less than that found in old-	
l	growth; 80 - 200 years old west of the Cascade crest.	
l	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
l	grasses and/or forbs form the natural climax plant community.	
l	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
l	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
l	tailings. May be associated with cliffs.	
I	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
l	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	1
l	canopy coverage of the oak component of the stand is 25%.	
I	Urban Natural Open Space: A priority species resides within or is adjacent to the open	
	space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
l	corridor connecting other priority habitats, especially those that would otherwise be	
l	isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
	acres) and is surrounded by urban development.	
	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
	enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
	in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
	The salinity may be periodically increased above that of the open ocean by evaporation.	
	Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
	habitat extends upstream and landward to where ocean-derived salts measure less than	
	0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
	beaches, and may also include the backshore and adjacent components of the terrestrial	
	landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
	associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
	recruitment, nutrient contribution, erosion control).	
	If wetland has 3 or more priority habitats = 4 points	
	If wetland has $2$ priority habitats = $3$ points	
	If wetland has 1 priority habitat = 1 point 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)	

Wetland name or number \_\_\_\_\_

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>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</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile.</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them are points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile.</li> <li>There is at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	3
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 14	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	9

WETLAND RATING FORM – WESTERN V Version 2 - Updated July 2006 to increase accuracy and reprodu	
Name of wetland (if known): We Hand X	Date of site visit: 6/22/07
Rated by Grea Allington Trained by Ecology? Y	
SEC: 32 TWNSHP: 23/ RNGE: 1 Is S/T/R in Appendix D?	YesNoX
Map of wetland unit: Figure App B Estimate	d size 0,03 acres

# SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

<u>і п ш ту Х</u>

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

00010	101 Hubitut I unetions	
TOTAL	score for Functions	



Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_ II\_\_\_ Does not Apply X

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



Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	The second
Estuarine	Depressional	X
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

August 2004

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		×
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>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).</li> </ul>		X
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

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

### **Classification of Wetland Units in Western Washington**

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

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

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

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

- 2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
  - NO- go to 3 **YES** The wetland class is **Flats**

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

- 3. Does the entire wetland unit meet both of the following criteria?
  - \_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
  - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
  - NO/ go to 4 YES The wetland class is Lake-fringe (Lacustrine Fringe)

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

- The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - \_\_\_\_The water leaves the wetland without being impounded?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

yes - The wetland class is Slope

3

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.

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

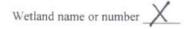
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

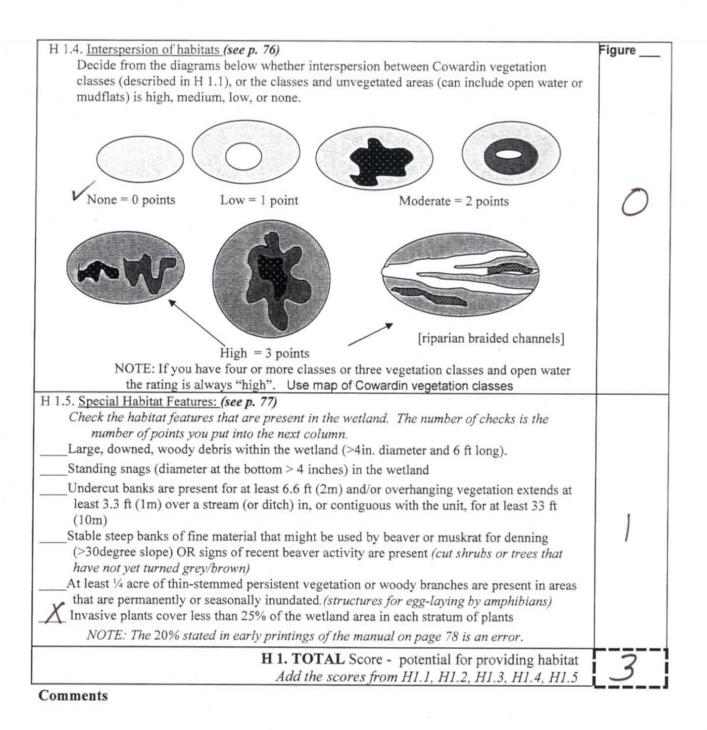
Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)
improve water quality	per tox)
D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D 1.1 Characteristics of surface water flows out of the wetland: 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 ( <i>permanently flowing</i> ) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow <b>and</b> <b>no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1 ( <i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i> ) Provide photo or drawing	Figure
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO points = 0	0
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	Figure
D1.4 Characteristics of seasonal ponding or inundation. 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.	Figure
Area seasonally ponded is $> \frac{1}{4}$ total area of wetland Area seasonally ponded is $< \frac{1}{4}$ total area of wetland Map of Hydroperiods	
Total for D 1Add the points in the boxes above	4
<ul> <li>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. — Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen Other — multiplier is 2 NO multiplier is 1</li> </ul>	(see p. 44) multiplier
<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	8
	WATER QUALITY FUNCTIONS = Indicators that the wetland unit functions to improve water quality         D1. Does the wetland unit have the potential to improve water quality?         D1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing. OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "Intermittently flowing")         S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0         D 1.3 Characteristics of persistent vegetation >= 1/2 of area points = 5 Wetland has persistent, ungrazed, vegetation >= 1/2 of area points = 1 Wetland has persistent, ungrazed vegetation >= 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation >= 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation >= 1/2 of area moints = 1 Wetland has persistent, ungrazed vegetation >= 1/2 of area moints = 1 Wetland has persistent, ungrazed vegetation >= 1/2 of area moints = 1 Wetland has persistent of 10 yrs.         Area seasonally ponded is >½ total area of wetland points = 4 Area seasonally ponded is >½ total area of wetland points = 4 Area seasonally ponded is >½ total area of wetland points = 0 Map of Hydroperiods         D total for D 1       Add the points in the boxes above         D Does the wetland unit have the opportunity to improve water quality? Answer YES if you know o

August 2004

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	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 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	2
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"points = 5Marks 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 outletpoints = 3Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trapwaterpoints = 1Marks of ponding less than 0.5 ftpoints = 0	Ø
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 wetland to 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 = 3V The 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	2
D	<ul> <li>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.</li> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> </ul>	
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	multiplier
	- Other YES multiplier is 2 (NO) multiplier is 1	]
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	2

These questions apply to wetlands of all A IABITAT FUNCTIONS - Indicators that unit fu	「「「「「」」、「「「「「「「」」」」、「「」」、「」、「」、「」、「」、「」、	habitat	Points (only 1 sc
			per bo
<b>I 1. Does the wetland unit have the <u>potential</u> I 1.1 <u>Vegetation structure</u> (see p. 72)</b>	to provide nabitat for many	species:	Figure
Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if a Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30% of If the unit has a forested class check if:	unit is smaller than 2.5 acres. 30% cover) cover)		
The forested class has 3 out of 5 strata ( moss/ground-cover) that each cover 2			
Add the number of vegetation structures that qualif			
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures	points = 4 points = 2 points = 1	
1.2. <u>Hydroperiods</u> (see p. 73)	VI structure	points = 0	Figure
<pre>descriptions of hydroperiods)     Permanently flooded or inundated     Seasonally flooded or inundated     Coccasionally flooded or inundated     Saturated only     Permanently flowing stream or river in, or     Seasonally flowing stream in, or adjacent     Lake-fringe wetland = 2 points</pre>		points = 3 points = 2 point = 1 points = 0	1
Freshwater tidal wetland = 2 points	Map of hydr	operiods	
<ul> <li>1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlan of the same species can be combined to meet the You do not have to name the species. Do not include Eurasian Milfoil, reed canan If you counted: List species below if you want to:</li> </ul>	e size threshold)		1





I 2. Does the wetland unit have the opportunity to provide habitat for many species?		Figure _
<ul> <li>hoose the description that best represents condition of biterion that applies to the wetland is to be used in the remaindisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the u undisturbed also means no-grazing, no landscapin</li> <li>100 m (330 ft) of relatively undisturbed vegetated 50% circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>100 m (330ft) of relatively undisturbed vegetated circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>50 m (170ft) of relatively undisturbed vegetated circumference.</li> <li>No paved areas (except paved trails) or buildings circumference. Light to moderate grazing, or lawn</li> <li>No paved areas or buildings within 50m of wetlar Light to moderate grazing, or lawns are OK.</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more to fields, paving, basalt bedrock extend to edge of w Buffer does not meet any of the criteria above.</li> </ul>	areas, see text for definition ofareas, rocky areas, or open water >95%ndisturbed part of buffer. (relativelyng, no daily human use)Points = 5d areas, rocky areas, or open water >Points = 4areas, rocky areas, or open water >95%Points = 4areas, rocky areas, or open water >95%Points = 4areas, rocky areas, or open water >25%Points = 3areas, rocky areas, or open water >25%Points = 3areas, rocky areas, or open water for >Points = 3The criteria abovewithin 25 m (80ft) of wetland > 95%ns are OK.Points = 2Points = 2Points = 2Points = 2Points = 1han 95% of the circumference (e.g. tilledelandPoints = 0.Points = 1	]
A Buffer does not meet any of the criteria above. 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 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = 1 point NO = 0 points		1

Wetland Rating Form – western Washington version 2

Wetland name or number \_\_\_\_\_

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
These are DFW definitions. Check with your local DFW biologist if there are any questions.	
<b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age.	
Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover	
may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-	
growth; 80 - 200 years old west of the Cascade crest.	
Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where	
grasses and/or forbs form the natural climax plant community.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	1
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	)
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component of the stand is 25%.	
Urban Natural Open Space: A priority species resides within or is adjacent to the open	
space and uses it for breeding and/or regular feeding; and/or the open space functions as a	
corridor connecting other priority habitats, especially those that would otherwise be	
isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10	
x acres) and is surrounded by urban development.	
<b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-	
enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and	
in which ocean water is at least occasionally diluted by freshwater runoff from the land.	
The salinity may be periodically increased above that of the open ocean by evaporation.	
Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine	
habitat extends upstream and landward to where ocean-derived salts measure less than	
0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.	
Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of	
beaches, and may also include the backshore and adjacent components of the terrestrial	
landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline	
associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log	
recruitment, nutrient contribution, erosion control).	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point 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)	

Wetland name or number \_\_\_\_\_

TOTAL for H 1 from page 14 <b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on		3
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4		6
<ul> <li>1 2.4 Wetland Landscape (choose the one description of the landscape of best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connection relatively undisturbed (light grazing between wetlands OK, as is 1 boating, but connections should NOT be bisected by paved roads, development.</li> <li>The wetland is Lake-fringe on a lake with little disturbance and ther wetlands within ½ mile</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connectidisturbed</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are wetland is Lake-fringe on a lake with disturbance and there are wetland within ½ mile</li> <li>There is at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	as between them are ake shore with some fill, fields, or other points = 5 re are 3 other lake-fringe points = 5 sons between them are points = 3 3 other lake-fringe points = 3 points = 2 points = 0	3