D R A F T

JURISDICTIONAL WATERS REPORT

Elwha River Restoration Project

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March 6, 2006

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1.0 INTRODUCTION

An environmental impact statement (EIS) was prepared by the National Park Service (NPS) for the Elwha River Restoration Project in 1996. Subsequently, due to changes in the project approach, a supplemental EIS (SEIS) was prepared by NPS in 2005. During the SEIS comment period, the Washington State Department of Ecology (Ecology) requested a wetland delineation be conducted for construction projects associated with the dam removal.

URS conducted wetland delineations in February 2003, June 2004, July 2005, and August 2005 to determine the presence, geographic extent, and character of wetlands in the construction project areas. In response to Army Corps of Engineers (Corps) comments, URS conducted investigations for additional jurisdictional waters in January and February 2006. This report documents the investigation work performed, describes the project area's wetlands, and characterizes the vegetation communities, soils, and hydrologic regimes observed in the vicinity of the construction projects.

2.0 METHODS

2.1 PROJECT AREA DETERMINATION

There are several construction projects associated with the removal of the Elwha River dams. An initial list of construction projects associated with the Elwha River Restoration Project was identified in the *Elwha River Restoration Study: Flooding Impacts Associated with Removal of Elwha and Glines Canyon Dams – Revised* (Corps 2003). Additional construction project areas were identified by the NPS and the Bureau of Reclamation (Reclamation). The construction projects investigated as part of this work include:

1) Tribal Wastewater Pipeline
2) Federal Levee Modification (RM 0.0 – 1.7)
3) New Fish Hatchery
4) Tribal Wastewater Treatment Facility
5) Fish Hatchery Water Pipeline and Levee Extension
6) Port Angeles Water Treatment Plant
7) Elwha Water Treatment Plant
8) Port Angeles Ranney Collector Modification
9) Flood Control Levee
10) Crown Z Road Improvements
11) Elwha Surface Water Intake
12) Dry Creek Water Association Existing Well Field Modification
13) Dry Creek Water Association Alternative Well Field
14) Private Residences Protection (RM 3.6, 3.7, 3.8)
15) Elwha Heights Water Pipeline
16) Elwha Dam Removal
17) Olympic Hot Springs Road Private Residences Protection (RM 8.0, 8.1, 8.15. 8.3, 8.35, 9.6)
18) Training Dike Modification (RM 8.4 – 8.5)
19) Olympic Hot Springs Road Culvert Replacements (2)
20) Glines Canyon Dam Removal
21) Nippon Paper International Improvements

Most of the projects have only preliminary descriptions and do not have defined construction footprints. In order to determine areas that need to be surveyed, URS estimated the potential construction disturbance footprint for each project. The construction footprint investigated includes the area of potential disturbance from construction equipment and staging. The estimated areas were reviewed by the Corps, Reclamation, NPS, and Lower Elwha Klallam Tribe (LEKT). The survey areas were modified in response to agency comments.

NPS acquired permission from landowners for the wetland investigations. However, access was denied on some properties. No wetland work was performed where landowners denied URS permission to their property.

Clallam County also requires investigation of potential impacts to wetland buffers (Clallam County Code [CCC] 27.12.215). To accommodate these regulations, URS investigated areas in a 200-foot survey corridor outside of the potential construction disturbance footprints for potential buffer impacts on lands for which the County has jurisdiction. This corridor width was chosen because 200 feet is the largest buffer required by Clallam County (CCC 27.12.215).

This 200-foot survey corridor was only investigated where the biologists had permission to enter. The 200-foot corridor was narrowed where it overlapped with the Elwha River. Since the Elwha River already has a 75-foot setback, within 75 feet of the Elwha River was not investigated. In addition, lands within the 200-foot survey corridor but on the LEKT Reservation or in Olympic National Park were not investigated because the County does not have jurisdiction on these lands.

2.2 WETLAND DELINEATION

Documents reviewed to aid identification and determination of wetlands in the project vicinity include:

- National Wetlands Inventory Maps, Angeles Point and Elwha, Washington Quadrangles (USFWS 1981);
- U.S. Geological Service (USGS) Topographic Maps, Angeles Point and Elwha, Washington Quadrangles (USGS 1985);
- Soil Survey of Clallam County Area, Washington (SCS 1987);
- *Final Elwha River Wetland Inventory for the Lower Elwha Restoration Project*, (Sheldon and Associates 1996);
- Natural Resource Conservation Service (NRCS) National Water and Climate Center WETS tables for Clallam County, Washington (NRCS 2003); and
- Aerial Photographs, color 2002 and black and white 2000.

Wetland determination and delineations were made on site by wetland biologists using the 1987 Corps *Wetlands Delineation Manual* and the 1997 Ecology *Wetland Identification and*

Delineation Manual. The 1997 Ecology methodology was developed to be consistent with the 1987 Corps manual. Delineated and surveyed wetland boundaries are subject to verification and approval.

For regulatory purposes, wetlands are defined as follows (Corps 1987):

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

According to the two manuals, the following three characteristics usually must be present for an area to be identified as a wetland: (1) wetland hydrology, (2) hydric soil, and (3) Hydrophytic vegetation. Wetland hydrology includes seasonal, periodic, or permanent inundation or soil saturation that creates anaerobic conditions in the soil for a portion of the growing season sufficient for wetland soil and vegetation to be maintained. Hydric soils are saturated, flooded, or ponded long enough during the growing season to become deoxygenated in the upper soil horizon. Hydrophytic vegetation consists of those plant species growing in water, in soil, or on a substrate that at least periodically lacks oxygen.

The growing season is technically defined as the period when soil temperatures 19.7 inches below the ground surface (bgs) are greater than 5°C (41°F), according to the 1987 Corps *Wetlands Delineation Manual* and regulatory guidance (Corps 1992). However, Corps guidance letters and the Ecology manual state that the final determination of growing season should be based on careful observations of evidence that active growth is occurring. This evidence can include new or recent growth such as flowers, new shoots, new leaves, or swollen buds on plants. Basically, if the plants are growing it is the growing season. All plant species displayed active growth during the site visits in June 2004, July 2005, and August 2005. Thus, it was determined that these site visits occurred within the growing season.

A total of 90 plots were used to investigate the various project sites. The sample plots are located in places that adequately represent the variation in vegetation, soils, and hydrologic regime within the site. The presence or absence of hydrophytic vegetation, hydric soil, and wetland hydrology indicators were documented for each sample plot as a means of justifying the delineated wetland boundaries. Wetland delineation data forms can be found in Appendix A.

2.2.1 Wetland Hydrology

To determine whether a vegetation community has wetland hydrology, an area is examined for inundation, soil saturation, shallow groundwater tables, or other hydrologic indicators. An area in which soils are saturated to the surface for at least 5 to 12 percent of the growing season meets the criterion for wetland hydrology.

The Elwha corridor is represented by two growing season estimates as identified by the NRCS National Water and Climate Center WETS tables for Clallam County, Washington (NRCS 2003). The growing season length for higher elevations in the project corridor is from February

24 to December 4 (a total of 284 days) as determined by averaging the growing season length given for the Elwha Ranger Station located at 360 feet elevation on Olympic Hot Springs Road at the Olympic National Park boundary. Since the growing season in higher areas of the project corridor is typically from February 24 to December 4, saturation is required to occur in the project area's higher elevations for at least 14 to 34 consecutive days to meet the wetland hydrology criterion.

The growing season length for low elevation areas in the project corridor is from February 17 to December 6 (a total of 293 days) as determined by averaging the growing season length given for the City of Port Angeles (City) located at 90 feet elevation. Since the growing season in low-elevation areas of the project corridor is typically from February 17 to December 6, saturation is required to occur at lower elevations for at least 15 to 35 consecutive days to meet the wetland hydrology criterion.

Seasonal changes in water levels and the effect of recent precipitation events must be considered when evaluating an area's hydrology. Wetland hydrology can also be inferred from the presence of any of the following indicators: watermarks on vegetation, drift lines, sediment deposits, water-stained leaves, surface-scoured areas, wetland drainage patterns, and oxidized root channels.

2.2.2 Hydric Soil

Soil observations were made in wetlands and adjacent upland areas by digging 1.5-foot-deep soil profiles in each sample plot. Soil color and other characteristics used to indicate hydric soils were documented using the Munsell Soil Color Chart (GretagMacbeth 2000). The *Soil Survey of the Clallam County Area, Washington* provided soil taxonomy, map unit name (soil series), and drainage class data (SCS 1987). Soil in which any of the following indicators is present meets the criteria for hydric soil:

- **Gleyed soil (gray colors).** Gleyed soils develop when mineral soil is saturated or inundated for periods of time sufficient to result in anaerobic (no oxygen) conditions. Anaerobic conditions cause elements common in soil, such as iron and manganese, to exist in reduced forms that are usually bluish, greenish, or grayish in color. Soil colors are determined using a Munsell soil color chart (GretagMacbeth 2000), which has separate pages for gley-colored soils.

- **Low chroma matrix.** A low chroma matrix develops when mineral soil is saturated or inundated for substantial periods of time during the growing season (but not long enough to produce gleyed soil) to result in anaerobic or hypoxic (low oxygen) conditions. A soil matrix is the portion of a given soil layer (usually more than 50 percent by volume) that has the predominant color. The Munsell system uses three dimensions to describe soil color: hue, value, and chroma. The Munsell soil color chart uses abbreviations to describe the colors, for example, 10YR 3/2. In the abbreviation, the first number and letters indicate the hue (10YR), the next number indicates the value (3), and the last number indicates chroma (2). A chroma of 1 or 2 is considered low. Soils with a matrix chroma of 2 are usually considered hydric when mottles are present. Mottles are rust-colored spots or

blotches in the soil formed by the oxidation of iron compounds via fluctuating water levels. Mottles found in soil with a matrix chroma of 2 (or less) often indicate that a soil is hydric.

- **High organic content**. Soil retains high levels of organic matter when saturation prevents decomposition over long periods, thus allowing organic debris to accumulate. Organic content is considered high if the soil is composed of more than 20 to 30 percent (threshold differs depending upon other soil characteristics) organic material by weight in a layer at least 8 inches thick located in the upper 32 inches of the soil profile.

- **Soils appearing on the hydric soils list**. A list of hydric soils has been compiled by the U.S. Department of Agriculture's National Technical Committee for Hydric Soils (NRCS 1996). Listed soils have reducing conditions for a significant portion of the growing season in a major portion of the root zone and are frequently saturated within 12 inches of the soil surface.

- **Other hydric indicators**. Other positive indicators of hydric soil include sulfide or "rotten egg" odor, aquic or peraquic moisture regimes (reducing soil moisture regimes due to groundwater at or near the soil surface), and the presence of iron or manganese concretions.

2.2.3 Hydrophytic Vegetation

The dominant plant species in each vegetation community were identified within each sample plot. Vegetation communities are defined here as a contiguous assortment of plants in a given area sharing similar environmental conditions. Dominant plants are those plant species that comprise at least 20 percent areal cover of a given plot. The sample plots are circular and have a 30-foot radius for trees and shrubs and a 5-foot radius for herbaceous plants. Plots were situated so that they best represent the vegetation present within each community.

The hydrophytic indicator status for each dominant species, as designated by the U.S. Fish and Wildlife Service for Region 9 (USFWS 1993), was used to determine whether the vegetation in each community is hydrophytic. To meet the hydrophytic vegetation criteria, more than 50 percent of the dominant species must have an indicator status of obligate, facultative wetland, and/or facultative. Indicator status categories are defined in Table 2-1. The facultative status categories are often modified using minus (-) or plus (+) symbols. For example, FAC+ species are considered to have a somewhat greater estimated probability of occurring in wetlands than FAC species, whereas FAC- species are considered to have a somewhat lesser estimated probability of occurring in wetlands than FAC species.

Table 2-1
Plant Species Wetland Indicator Categories

Indicator Category	Occurrence	Probability in Wetlands (estimated)
Obligate (OBL)	Occurs almost always in wetlands under natural conditions	>99%
Facultative Wetland (FACW)	Usually occurs in wetlands, but occasionally found in non-wetlands	67-99%
Facultative (FAC)	Equally likely to occur in wetlands and non-wetlands	34–66%
Facultative Upland (FACU)	Usually occurs in non-wetlands, but occasionally found in wetlands	1–33%
Upland (UPL)	Occurs almost always under natural conditions in non-wetlands in this region, but may occur in wetlands in another region	<1%

Source: Corps 1987

2.3 WETLAND CLASSIFICATION

2.3.1 Cowardin Classification

Wetlands are classified according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Under the Cowardin classification scheme, wetlands and deepwater habitats are grouped into systems based on shared hydrologic factors. These systems are marine, estuarine, riverine, lacustrine, and palustrine.

Marine Systems consist of the ocean overlying the continental shelf and coastline exposed to waves and currents of the open ocean shoreward to (1) extreme high water of spring tides; (2) seaward limit of wetland emergents, trees, or shrubs; or (3) the seaward limit of the Estuarine System, other than vegetation. Salinities exceed 30 parts per thousand (ppt).

Estuarine Systems consist of deepwater tidal and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean and where ocean water is at least occasionally diluted by stormwater runoff. These systems are bounded in an area that extends 1) upstream and landward to where ocean-derived salts measure less than 0.5% during an annual low flow, 2) seaward to an undefined line that closes the mouth of the river, bay or sound, or 3) to the seaward limit of wetland emergents, shrubs, or trees. Two types of estuarine wetlands are found in the Elwha River Restoration project area: estuarine emergent (E2EM) and estuarine scrub-shrub (E2SS).

Riverine Systems include all wetlands and deepwater habitats contained within a channel, with two exceptions: 1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens; and 2) habitats with water containing ocean-derived salts in excess of 0.5%. The riverine system ceases at the downstream end where the concentration of ocean derived salts in the water exceed 0.5% during the period of annual average low flow, or where the channel enters a lake. It terminates at the upstream end where tributary streams originate. Upland islands or palustrine wetlands may occur in the channel, but are not included in the riverine system. Only

one type of riverine wetland was found in the Elwha River Restoration construction project vicinity: riverine upper perennial emergent (R3EM).

Lacustrine Systems include wetlands and deepwater habitats which are situated in a topographic depression, and which lack trees, shrubs, persistent emergents, emergent mosses, or lichens. Lacustrine systems are greater than 30% aerial coverage of water and total area exceeds 20 acres. Wetland and deepwater habitats are included in the lacustrine system if an active wave-formed or bedrock shoreline feature makes up all or part of the wetland boundary, or if water depth exceeds 6.6 feet. Islands of palustrine wetland may be within the boundaries of the lacustrine system. Only one type of lacustrine wetland was found in the Elwha River Restoration construction project vicinity: lacustrine littoral emergent (L2EM).

Palustrine Systems include all nontidal wetlands dominated by trees, shrubs, emergent herbaceous plants, mosses, and/or lichens, and all such wetlands that occur in tidal areas where the salinity due to ocean-derived salts is below 5 ppt. Wetlands included in the palustrine system are those commonly referred to as marshes, swamps, bogs, fens, prairies, seeps, and intermittent ponds. A Palustrine system can exist directly adjacent to or within the Lacustrine, Riverine, or Estuarine systems.

Palustrine wetlands are divided into classes by the dominant vegetation. Palustrine forested (PFO) wetlands or forested wetland communities are dominated by trees or arborescent shrubs greater than 20 feet tall having greater than 30 percent cover. Palustrine scrub-shrub (PSS) wetlands or scrub-shrub wetland communities are dominated by woody shrubs less than 20 feet tall with at least 30 percent cover. Palustrine emergent (PEM) wetlands or emergent wetland communities are dominated by nonwoody, rooted vascular plants having at least 30 percent cover.

The U. S. Fish and Wildlife Service National Wetlands Inventory (NWI) provides information on the characteristics, extent, and status of the nation's wetlands and deepwater habitats. The NWI collects data from aerial photography to produce maps that correspond to the USGS 7.5 or 15 minute topographic quadrangles. NWI quadrangles use the Cowardin classification system to characterize wetland features on each map.

2.3.2 HGM Classification

Wetlands were classified according to the Hydrogeomorphic (HGM) classification. The HGM classification groups wetlands into categories based on the geomorphic and hydrologic characteristics that control many wetland functions. We have used the modified version of this classification system that is found in the *Washington State Wetland Rating System for Western Washington* (Ecology 2004). The HGM classes found in the project area include: tidal fringe (estuarine and freshwater), riverine, lake-fringe, slope, and depressional.

Tidal fringe wetlands are found along the coasts and in river mouths to the extent of tidal influence. The dominant source of water is from the ocean or river. The unifying characteristic of this class is the hydrodynamics. All tidal fringe wetlands have water flows dominated by tidal influences and water depths controlled by tidal cycles. Tidal fringe wetlands in which water has

a salinity higher than 0.5 parts per thousand (ppt) are considered estuarine and those with less than 0.5 ppt are considered freshwater.

Riverine wetlands occur in valleys associated with stream or river channels. They lie in the active floodplain of a river and have important hydrologic links to the water dynamics of the river or stream. The distinguishing characteristic of riverine wetlands in Washington is that they are frequently flooded by flow from the stream or river. Riverine wetlands may also receive significant amounts of water from other sources, such as groundwater and slope discharges.

Lake-fringe wetlands are distinguished from other wetlands based on the area and depth of open water adjacent to them. These wetlands have areas of adjacent unvegetated open water larger than 20 acres and more than 6.6 feet deep over 30 percent of the open water areas. Wetlands found along the shores of large reservoirs behind dams along major rivers are considered to be lake-fringe.

Slope wetlands occur on hill or valley slopes where groundwater "daylights" and begins running along the surface, or immediately below the soil surface. Water in these wetlands flows only in one direction (down the slope) and the drain is steep enough that the water is not impounded.

Depressional wetlands occur in depressions where elevations within the wetland are lower than the surrounding landscape. The shapes of depressional wetlands vary, but in all cases the movement of surface water and shallow subsurface water is toward the lowest point in the depression. The depression may have an outlet, but the lowest point in the wetland is somewhere within the boundary, not at the outlet.

2.4 WETLAND RATINGS AND BUFFERS

Wetlands were rated using Ecology's *Wetlands Rating System for Western Washington* (Ecology 2004) and the Clallam County Code. Both Ecology and Clallam County recognize four categories/classes of wetlands: I, II, III, and IV. Ecology Wetland Rating Data Forms are provided in Appendix B. A few project areas also lie within the City of Port Angeles. The City of Port Angeles uses Ecology's system to rate wetlands (Port Angeles City Code [PACC] 15.24.040).

2.4.1 Ecology Wetland Rating System

Category I wetlands are those wetlands whose functions and values are so difficult to replace that the state cannot afford the risk of any degradation to them. These wetlands contain one or more of the following:

- Represent unique or rare wetland types (estuarine wetlands greater than one acre, Natural Heritage wetlands, bogs, and coastal lagoon wetlands);
- Are more sensitive to disturbance than most wetlands;

- Are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime (mature and old-growth forested wetlands greater than one acre in size);

- Provide a high level of functions (greater than 70 points out of 100 using Ecology's revised rating system).

Category II wetlands are those wetlands that are difficult, though not impossible, to replace, generally have little to no disturbance, and provide high levels of some functions. The primary criteria for category II wetlands are that they score 51–69 out of 100 points on the rating questions related to functions. Category II wetlands also include estuarine wetlands less than 1 acre, or greater than 1 acre that are disturbed, and interdunal wetlands greater than 1 acre. Although category II wetlands occur more commonly than category I wetlands, they are deemed to warrant a relatively high level of protection.

Category III wetlands generally provide a moderate level of functions, have been disturbed in some way, and are often less diverse or more isolated from other natural resources. The primary criteria for category III wetlands are they score 30–50 out of 100 points as defined in Ecology's *Wetlands Rating System for Western Washington*. Interdunal wetlands between 0.1 and 1 acre in size are also category III regardless of their score. Category III wetlands are regulated wetlands that do not contain features or levels outlined in Categories I, II, or IV. They occur more frequently, are less difficult to replace, and need a moderate level of protection compared to higher rated wetlands.

Category IV wetlands have the lowest levels of functions (less than 30 points on the rating questions relating to functions). They do not meet the criteria for Category I, II or III wetlands. These are wetlands that should be replaceable and, in some cases, can be improved from a functions standpoint. These wetlands may provide important functions and values and should be protected to some degree.

2.4.2 Clallam County Wetland Rating System

Class I wetlands are those wetlands classified as:

- Estuarine wetland habitat types;

- Greater than or equal to 20 acres, connected to a significant wildlife habitat movement corridor, and contain at least one significant habitat feature;

- Greater than or equal to 3 acres, dominated by 90 percent native vegetation (excluding contiguous stands of cattail, soft rush, hardhack, and horsetail), containing a forested or scrub-shrub habitat type, containing at least one significant habitat feature, and connected to a significant wildlife habitat movement corridor; and/or

- Wetlands of local significance.

Class II wetlands are those wetlands classified as:

- Greater than or equal to 20 acres and not meeting Class I criteria; or
- Less than 20 acres, dominated by 50 percent native vegetation (excluding contiguous stands of cattail, soft rush, hardhack, and horsetail), containing a forested or scrub-shrub habitat type, containing at least one significant habitat feature, and connected to a significant wildlife habitat movement corridor.

Class III wetlands are those wetland classified as wetlands less than 20 acres which do not satisfy Class I, II, or IV criteria.

Class IV wetlands are those wetlands classified as hydrologically isolated, less than 1 acre but greater than 10,000 square feet, and dominated by plant cover composed of one of the following native species: cattail, soft rush, hardhack, or horsetail, or less than 2 acres and dominated by plant cover composed of non-native plant species.

2.4.3 Clallam County and City of Port Angeles Wetland Buffers

Clallam County enforces wetlands buffers (CCC 27.12.215). The buffer widths are determined based on the nature of the development activities and the wetland class (Table 2-2).

Table 2-2
Clallam County Wetland Buffer Widths

	Major New Development	Minor New Development
Class I	200 feet	100 feet
Class II	150 feet	75 feet
Class III	75 feet	50 feet
Class IV	50 feet	25 feet

Source: CCC 27.12.215

The City of Port Angeles also enforces wetland buffers (PACC 15.24.070). The buffer widths are also determined based on the nature of the development activities and the wetland class (Table 2-3).

Table 2-3
City of Port Angeles Wetland Buffer Widths

	High Intensity Development	Low Intensity Development
Category I	300 feet	200 feet
Category II	200 feet	100 feet
Category III	100 feet	50 feet
Category IV	50 feet	25 feet

Source: PACC 15.24.070

2.5 WETLAND FUNCTIONS ASSESSMENT

Wetland functions were analyzed using both methodologies developed by Ecology and Clallam County.

2.5.1 Ecology Methodology

Ecology requested that the functions be assessed in three broad categories: improving water quality, hydrologic functions, and habitat. Both the potential and opportunity to provide these functions were analyzed. The potential to perform a function is based on the physical, biological, and chemical characteristics within the wetland itself. The opportunity is to what degree the wetland's position in the landscape will allow it to perform a specific function.

2.5.2 Clallam County Methodology

Clallam County requires wetlands be described based on the biological, chemical, and physical functions that the wetlands perform (CCC 27.12.210). These are broken down into watershed functions and landscape functions. The City of Port Angeles also uses this methodology (PACC 15.24.045)

The watershed functions are determined by wetland hydrology type (listed in Table 2 of CCC 27.12.210) and wetland hydrologic functions. The wetland hydrologic functions include flood storage, floodflow desynchronization, streamflow and channel maintenance, groundwater recharge, temperature maintenance, sediment/bacteria removal, nutrient removal opportunity, toxicant removal opportunity, seawater intrusion prevention, drinking water, water availability for migratory waterfowl, and water availability for other wildlife.

The landscape functions are characterized based on Cowardin classification, habitat diversity and size, upland habitat type, significant habitat features, species use, anadromous fish use, and significant wildlife movement corridors.

2.6 WETLAND MAPPING

The boundaries between wetland and upland areas were marked in the field with orange "wetland boundary" flagging. Sample plots were marked with pink flagging or pink pin flags.

The horizontal location of each point was then recorded with differential global positioning system (DGPS) units that are capable of recording sub-meter data. A Trimble Pathfinder XR Global Positioning System (GPS) unit was used in the study area.

The GPS unit was configured to the following specifications:

Position Mode: >4 Satellites

Elevation mask: >15 degrees

SNR mask: >6.0

PDOP Mask: <6.0

The data was collected in Lat/Long NAD83 coordinate system.

The points recorded with the GPS unit were post-processed to nearby base stations with Pathfinder Office software to achieve sub-meter results.

Where GPS coverage was not available, usually under heavy tree canopy, the wetlands were measured in the field and drawn on USGS digital orthophoto quads (DOQ). These drawing were then digitized onto the DOQs.

2.7 OTHER JURISDICTIONAL WATERS

2.7.1 Ordinary High Water Mark

For purposes of Section 404 of the Clean Water Act, the lateral limits of Corps jurisdiction over non-tidal waterbodies extend to the Ordinary High Water Mark (OHWM), in absence of adjacent wetlands. The jurisdictional OHWM has a potential to vary between the Corps, Ecology, and Clallam County. Ecology has agreed to use the Corps OHWM determination (pers. Com. Dick Bauman 11/14/05). Reclamation used modeling to determine the OHWM for the Elwha River.

Elwha River OHWM

This methodology is taken directly from a Bureau of Reclamation draft memorandum dated February 13, 2006 which discusses the model used to derive the Elwha River OHWM (Bountry 2006). The memorandum language has not been altered, although it has been formatted for this report.

For Reclamation's analysis, the HEC-RAS one-dimensional hydraulic model (Version 3.1.3) and the 2005 aerial photographs in ARC GIS were utilized to determine the OHW, along with field experience from past studies on the Elwha River. The following three steps were accomplished to identify the OHWM in both elevation and planview results.

Step 1: Delineate Active, Unvegetated Channel

The first step was to delineate the boundary of the unvegetated active channel in GIS utilizing rectified 2005 color aerial photography at a scale of 1:32,000. The unvegetated active channel included all low-flow channels and unvegetated bar areas visible on the aerial photography (not masked by vegetation). This provided a minimum boundary of the bankfull channel and OHWM inundation area.

Step 2: Identify OHWM Elevation at Cross-Sections

The next step was to utilize the HEC-RAS model to determine the approximate bankfull flow for the Elwha River to use as an indication of the extent of the OHWM. This model was based on river survey data from 2001 and LiDAR data in the floodplain. The bankfull discharge typically ranges between the mean annual discharge to the 2-year flood depending on local river conditions. Leopold (1994) defines the bankfull level as the point where the following occurs:

1) A change from bare gravel bar, riparian vegetation (willows can occur), or channel to vegetation less tolerant of consistent water inundation such as forbs, alders, or grass.

2) A topographic break (can be gradual or abrupt)

3) A change in size distribution of materials exposed at surface (on Elwha it is typical to see coarse sediment in active channel bed change to fine sediment above bankfull elevation)

The mean annual discharge up to the 2-year (13,300 cfs) flood was modeled and compared to see which one best represents the bankfull flow to use for OHWM determination. Indicator cross-sections were chosen to determine the bankfull discharge that represented a range of conditions including well-defined bankfull sections, confined valley sections, split flow sections, and areas adjacent to dam removal project and wetland sites. Eighteen indicator cross-sections were used on the Middle Elwha (Glines Canyon Dam to Lake Aldwell) model and fourteen cross-sections were used on the Lower Elwha (Elwha Dam to mouth) model.

As discharge increases in the bankfull channel on the Elwha, the increase in stage should be much greater than the increase in wetted width. Once the flow begins to spill over the top of banks and inundate higher elevation surfaces, a significant increase to the wetted width occurs and the increase to stage becomes small with each subsequent increase to discharge. The flow that filled the bankfull channel without significantly spilling over the banks and causing a large increase in wetted width was identified as the bankfull discharge. In the ideal sections, the top of bank is clearly defined and there is an obvious topographic break point. In some cases the Elwha River channel is located between high terraces or bedrock canyon walls, and the top of bank is not clearly defined. In other cases, there are numerous channels (split flow) that become inundated at bankfull flows and it is more difficult to associate a single discharge with the OHWM. In almost all cases where the bankfull channel could be identified, about the 1.4 year flood (approximately 10,000 cfs) was a closer fit for meeting these criteria than the 2-year flood.

Step 3: Refine Planview Boundary of OHWM in GIS

From the bankfull HEC-RAS analysis, cross-sections were identified where it may be appropriate to expand the OHWM boundary. HEC-RAS results for water surface inundation and depth were generated for flows of 5,000 cfs, 10,000 cfs, and the 2-year flood and exported back into the GIS project and plotted on the 2005 aerial photographs. The HEC-RAS cross-sections and GIS project were then used to re-evaluate and expand the OHWM boundary where the following two criteria were met: 1) a distinguishable channel was present with at least 0.5 foot or more of depth and 2) the channel had an upstream connection with the main river channel.

These side and overflow channels were considered inundated frequently enough that they should also be included in the OHWM boundary, even if not easily visible on the 2005 aerial photography. In some cases vegetated surfaces (islands) were present between the main channel and the side channels. For these situations the OHWM boundary was expanded to the outside most bank (farthest from main channel) of the side channel so that the vegetated surface was also included.

If man-made levees or roads were present that are known to prevent overtopping of flow up to at least the 1.4-year flood, areas on the non-river side of these features were not included in the OHWM boundary. One area this occurred was at the powerline crossing just upstream of the existing diversion dam at river mile 3.5. In questionable areas, the inundation area for a lower flow of 5,000 cfs was used to determine whether the channel would get inundated at half the bankfull flow. If the channel(s) did get inundated at this lower flow, they were also included in the OHWM boundary. The 2-year flood inundation area was also used as a check on the OHWM boundary developed for 10,000 cfs. In a few instances, areas that appeared to have young vegetation and looked recently reworked by the river on the 2005 aerial photograph were also included even if no significant depth was present at 10,000 cfs in the HEC-RAS model developed from 2001 survey data.

For the surface diversion structure at river mile 3.5, two-dimensional hydraulic model results were also available for 5,000, 10,000, and 15,000 cfs that were used to confirm the inundation areas at 1.4 year flood from the HEC-RAS model (2006 draft report). The two-dimensional model study was performed by Reclamation in support of the new diversion structure construction planned at this location.

Discharge Value Determination

The 2-year flood frequency number was computed by Corps in 1995 based on historical gage data at the USGS 12045500 Elwha River at McDonald Bridge near Port Angeles, WA gage (Corum, written communication, 2005). The McDonald Bridge gage is located about 1 river mile above the inlet to Lake Aldwell in what is referred to as the Middle Elwha reach. To account for an increase in drainage area in the area modeled downstream of the gage to the mouth, Corps increased the flow at the McDonald Bridge by 8% at Elwha Dam and by another 2% at river mile 2.4.

A flow of 10,000 cfs is about the 1.4 year return interval based on a spreadsheet analysis of flood frequency computed by Reclamation in 2005 for the gage data between 1897 to 2003 (with a gap in data from 1902 to 1918). This same flow value (without an adjustment for increase in drainage area) was also used in the Lower Elwha reach because it still seemed appropriate to represent bankfull elevations when evaluating the cross-section plots (see next section for discussion.

Table 2-4
Flows used in OHWM Modeling

Location	2-Year (designated by Corps)	~1.4-Year (chosen based on visual interpretation of bankfull in HEC-RAS model)
Middle Elwha (Glines to Lake Aldwell)	13,300 cfs	10,000 cfs
Elwha Dam (RM 4.9) to RM 2.4	14,470 cfs	10,000 cfs
RM 2.4 to Mouth	14,760 cfs	10,000 cfs

HEC-RAS Model Background

The existing conditions HEC-RAS model used was previously calibrated by the Corps for purposes of routing the 100-year flood. This model was calibrated by Corps to the January 2002 flood event, about a 10-year flood. The model also compared relatively well to a low-flow profile measurement of water surface elevation accomplished in 2001 (average discharge of 1,030 cfs). No additional measurements were available to calibrate the model at the 1.5 or 2-year flows. The model is based on cross-sections generated from the following topographic data:

1. LiDAR Data (floodplain)
    a. Obtained from Clallam County (processed by TerraPoint, Inc.)
    b. Accuracy specified at 2 meter post-processing with +/- 27 cm vertical accuracy
    c. LIDAR data collected from aerial flight between February 7 to 15, 2001
    d. 6 ft-by-6 ft grid generated from raw LIDAR data by TerraPoint utilized in TINs
2. Channel Survey Data
    a. September 28 to October 6, 1994: Cross section surveys by Bureau of Reclamation and Army Corps of Engineers
    b. October 23 to 27, 2000: Cross section surveys by Reclamation near City Diversion Dam
    c. May 5 to 8, 2001: Longitudinal and cross section surveys by boat by Reclamation
3. Reservoir Survey Data
    a. Lake Aldwell survey data from 1994 by Bureau of Reclamation
    b. Lake Mills survey data from 1994 Bureau of Reclamation survey and 1988 Hosey and Associates survey

The original HEC-RAS model was calibrated by Corps for the 10-year flood and used to predict the 100-year flood inundation area. For this analysis of OHW, lower flows were modeled of the 2-year flood and smaller. Levees and ineffective flow areas can be assigned in HEC-RAS. Man-made levees were left in place and not adjusted. Where levees or ineffective flow areas were placed on natural ground in the previous model within the new OHWM wetted areas, they were removed for this analysis. The justification for this was that any area inundated during the OHWM should generally have free-flowing water surfaces. Levees or ineffective areas assigned in the previous model outside of the OHWM boundary or on surfaces that were not inundated within the OHWM boundary were left in place.

No changes to roughness, boundary conditions, or geometry were made in the HEC-RAS model. Both models were limited to the sub-critical flow regime. A downstream boundary condition in the Lower Elwha model of 8.2 feet based on tidal data was used to match the Corps model boundary conditions. For the Middle Elwha model, a normal depth downstream boundary condition was used with a slope of 0.006 as set in the Corps model.

Other Tributaries OHWM

For project areas outside of the modeling area, the OHWM was observed and mapped with GPS in the field. The OHWM was determined using the physical indicators typically used by the Corps (Corps 2005):

Natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, presence of litter and debris, wracking, vegetation matted down, bent or absent, sediment sorting, leaf litter disturbed or washed away, scour, deposition, multiple observed flow events, bed and banks, water staining, and change in plant community.

2.7.2 Mean Higher High Water Line

The Mean Higher High Water Line (MHHW) is the average of the higher of the two daily high tides observed over a given period of time. In an email dated November 3, 2005, Reclamation received the MHHW elevation of 9.3 feet from the Corps. This MHHW elevation is for the area at the mouth of the Elwha River.

2.7.3 "Talent" ditches

In *Headwaters, Inc. v. Talent Irrigation District*, the Supreme Court held that irrigation canals that receive water from natural streams and lakes, and divert water to streams and creeks, are connected as "tributaries" to those other waters. The Corps' interpretation of the Talent decision is that they may exert jurisdiction whenever there is a hydrological connection between a navigable water of the United States and another waterbody. It is irrelevant whether that connection is a canal or ditch. It does not matter whether the connecting watercourse is manmade or not, or whether it is intermittent or perennial. If the connecting waterbody is capable of transporting pollutants to other waters of the United States, then it too will be considered jurisdictional.

Corps field staff will use a multiple-parameter methodology for establishing jurisdiction. The Corps looks at:

- The location of the ditch (start and end points)
- Source of the water transported into the ditch
- Discharge location and pathway of the water from the ditch
- Visible bed and bank configuration in the ditch (versus sheetflow)
- Ordinary High Water (using field indicators)

2.7.4 Elwha River Flood Channels

One project area is within the Elwha River floodplain and contains overflow channels that are activated during floods. During the October 17, 2005 field visit, the Corps stated that aerial photo interpretation and use of Lidar data could be used to map these features. However, these features were found to lie below the OHWM, as modeled by Reclamation. Since they are below this jurisdictional line, the flood channels were not mapped out separately.

3.0 RESULTS

Each potential construction disturbance footprint, where access was permitted, was investigated. Wetlands were not found in all construction project areas. Wetlands that were located in the vicinity of construction project areas are listed in Table 3-1. A discussion of observed wetlands and other jurisdictional waters are present in the following sections.

Table 3-1
Wetlands in the Vicinity of Elwha River Restoration Construction Projects

Construction Project	Wetland	Cowardin Class	HGM Class	Rating (Ecology/County)	Figure #
Federal Levee	FL-A	PFO / PSS	Riverine	III[a]	5
Federal Levee	FL-B	PSS / PEM	Depressional	III[a]	5
Federal Levee	FL-C	PSS / PEM	Depressional	IV[a]	5
Federal Levee	FL-D	PFO	Depressional	III[a]	6
Water Pipeline and Levee	WPL-2	PEM	Riverine	III[a]	8
Water Pipeline and Levee	WPL-1	PEM	Depressional	IV / III	8
Water Pipeline and Levee	LA3-1	PEM	Depressional	IV[a]	9
Water Pipeline and Levee	LA3-2	PEM	Depressional	IV[a]	9
Water Pipeline and Levee	LA3-3	PEM	Depressional	IV[a]	9
Port Angeles Wastewater Treatment Plant	WTP-1	PEM	Depressional	IV[b]	12
Port Angeles Wastewater Treatment Plant	WP-1	PEM	Depressional	IV / III	12
Elwha Water Treatment Plant	A	PEM	Riverine	IV / III	8
Elwha Water Treatment Plant	B	PEM	Riverine	IV / III	8
Elwha Water Treatment Plant	C	PFO / PEM / PSS	Depressional	II / II	9
Elwha Water Treatment Plant	D	PFO	Depressional	II / II	9
Elwha Water Treatment Plant	E	PEM	Riverine	IV / III	9
Elwha Water Treatment Plant	F	PFO / PEM	Riverine	IV / III	8
Elwha Water Treatment Plant	O	PEM	Riverine	III / III	9
Elwha Surface Water Intake	G	PSS	Slope	III / III	13
Elwha Surface Water Intake	H	PEM	Depressional	IV / III	13
Elwha Surface Water Intake	I	PSS / PEM	Riverine	III / II	13
Elwha Surface Water Intake	J	PFO	Riverine	III / II	13
Dry Creek Alternative Well Field	ER-1	PFO / PSS	Depressional	III / III	15
Dry Creek Alternative Well Field	ER-2	PEM	Depressional	IV / III	15
Private Residences – RM3	K	PFO	Depressional	IV / IV	13
Private Residences – RM3	L	PSS / PEM	Depressional	III / II	13
Private Residences – RM3	M	PEM	Depressional	III / III	13
Private Residences – RM3	N	PEM	Depressional	IV / IV	13
Elwha Heights Water Pipeline	EH-1	PSS	Depressional	IV / III	11
Elwha Heights Water Pipeline	EH-2	PEM	Depressional	IV / III	11
Elwha Heights Water Pipeline	EH-3	PEM	Depressional	IV / III	11
Elwha Heights Water Pipeline	EH-4	PEM	Depressional	IV / III	11
Elwha Heights Water Pipeline	EH-5	PEM	Depressional	III / III	10
Elwha Heights Water Pipeline	EH-6	PEM	Depressional	III / III	10
Elwha Heights Water Pipeline	EH-7	PSS / PEM	Depressional	III / III	10
Elwha Heights Water Pipeline	EH-8	PSS / PEM	Depressional	III / III	10
Elwha Heights Water Pipeline	EH-9	PSS / PEM	Depressional	IV / III	10
Elwha Heights Water Pipeline	EH-10	PEM / POW	Depressional	III / III	10
Elwha Heights Water Pipeline	EH-11	PSS / POW	Depressional	III / III	10

Table 3-1 (Continued)
Wetlands in the Vicinity of Elwha River Restoration Construction Projects

Construction Project	Wetland	Cowardin Class	HGM Class	Rating (Ecology/County)	Figure #
Elwha Dam	ED-1	PEM	Depressional	IV / IV	16
Elwha Dam	ED-2	L2EM / PSS	Lake-fringe	III / III	16
Private Residences – Olympic Hot Springs Rd	PR-1	PFO	Depressional	II / III	17
Private Residences – Olympic Hot Springs Rd	PR-2	PEM	Depressional	IV / IV	17
Private Residences – Olympic Hot Springs Rd	PR-3	PEM	Depressional	IV / III	17
Private Residences – Olympic Hot Springs Rd	PR-4	PSS / PEM	Depressional	III / III	17
Private Residences – Olympic Hot Springs Rd	PR-5	PEM	Depressional	IV / III	17
Training Dike	TD-1	PSS / PEM	Riverine	III / III	17
Glines Canyon Dam	GCD-1	PEM	Lake-fringe	IV[a]	20

[a]These wetlands are were not rated using the Clallam County Code because they are either on the LEKT Reservation or in the Olympic National Park and are outside of Clallam County's jurisdiction.
[b]This wetland was not rated using the Clallam County Code because it is in the City of Port Angeles, which uses Ecology's rating system.

3.1 TRIBAL WASTEWATER PIPELINE

The proposed Tribal wastewater pipeline route runs along Charles Road, Sampson Road, Lower Elwha Road, and Stratton Road (Figure 2). The whole route is contained within the LEKT reservation. The soil in this project area is well-drained and no wetland areas were found. In addition, no other jurisdictional waters were observed. The roadside ditches within this project area are vegetated and have no culverts under driveways and roads that would connect them to other jurisdictional waters. In addition, no water was observed in the ditches during the site visit on February 1, 2006.

3.2 FEDERAL LEVEE MODIFICATION

The federal levee is located east of the Elwha River on the LEKT Reservation. Four wetlands are located in the vicinity of the federal levee potential construction disturbance footprint. Wetland FL-A is located west of the federal levee and Wetlands FL-B, FL-C, and FL-D are all located east of the levee (Figures 5 and 6).

3.2.1 Wetland FL-A

Wetland FL-A contains both palustrine forested and palustrine scrub-shrub plant communities. This wetland extends west from the federal levee beyond the potential construction disturbance footprint. This wetland is located approximately 200 feet south and west of the north terminus of the federal levee. Hydrology is influenced by groundwater and seasonal flooding from the adjacent stream. This wetland is classified as riverine under the HGM classification.

Soils in Wetland FL-A were somewhat moist during the July 25, 2005 site investigation. The soil is a very dark gray (2.5Y 3/1) sandy clay loam overlaying a dark gray (10YR 4/1) compressed sand, which matches the Typic Xerofluvents identified in the NRCS soil survey. Vegetation in the sample plot is dominated by black twinberry with Himalayan blackberry

(*Rubus armeniacus*) rooted outside the wetland growing into the wetland. Other plants present in the sample plot include red alder, western red cedar, salmonberry, giant horsetail (*Equisetum telmateia*), and sword fern (*Polystichum munitum*).

Wetland FL-A is classified as a Category III wetland using Ecology's rating system. This wetland was not rated using the CCC because it is on the LEKT Reservation.

3.2.2 Wetland FL-B

Wetland FL-B contains both palustrine scrub-shrub and palustrine emergent plant communities. This wetland extends east from the federal levee beyond the potential construction disturbance footprint. This wetland is located about 300 feet south and east of the north terminus of the federal levee. Hydrology is influenced by direct precipitation and groundwater. This wetland is classified as depressional under the HGM classification.

Soils in Wetland FL-B were somewhat moist during the July 25, 2005 site investigation. The soil is a very dark gray (10Y 3/1) very fine sandy loam overlaying a dark grayish brown (2.5Y 4/2) sandy loam containing small, but common, strong brown (7.5YR 4/6) redoximorphic features. Soils present in the wetland closely match the Puget silt loam identified in the NRCS soil survey. Vegetation in the sample plot is dominated by giant horsetail and Canada thistle (*Cirsium arvense*). Other plants present in the sample plot include willow (*Salix* sp.), quackgrass (*Elytrigia repens*), tall fescue (*Festuca arundinacea*), and bentgrass (*Agrostis* sp.).

Wetland FL-B is classified as a Category III wetland using Ecology's rating system. This wetland was not rated using the CCC because it is on the LEKT Reservation.

3.2.3 Wetland FL-C

Wetland FL-C contains both palustrine scrub-shrub and palustrine emergent plant communities. This wetland extends east from the federal levee beyond the potential construction disturbance footprint. This wetland is located about 800 feet south and east of the north terminus of the federal levee. Hydrology is influenced by direct precipitation and groundwater. This wetland is classified as a depressional wetland under the HGM classification.

This soil in Wetland FL-C is a very dark gray (10Y 3/1) sandy clay loam overlaying a very fine sandy loam. Soils present in the wetland closely match the Puget silt loam identified in the NRCS soil survey. Vegetation in the sample plot is dominated by velvetgrass and hardhack. Other plants present in the sample plot include Himalayan blackberry, Nootka rose, quackgrass, tall fescue, bentgrass, stinging nettle (*Urtica dioica*), and orchardgrass (*Dactylis glomerata*).

Wetland FL-C is classified as a Category IV wetland using Ecology's rating system. This wetland was not rated using the CCC because it is on the LEKT Reservation.

3.2.4 Wetland FL-D

Wetland FL-D is a palustrine forested wetland ditch draining the levee wall and adjacent homes from the east. This wetland is located about 800 feet southeast of the existing tribal fish hatchery

next to the east wall of the federal levee. Hydrology is influenced by surface runoff. This wetland is classified as a depressional wetland under the HGM classification.

This soil in Wetland FL-D is a very dark grayish brown (10Y 3/2) sandy loam overlaying a gray (10YR 5/1) sand with gravel and cobble. Soil present in the wetland somewhat match the Puget silt loam identified in the NRCS soil survey. Vegetation in the sample plot is dominated by black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Himalayan blackberry, velvetgrass, and bentgrass. Other plants in the sample plot include trailing blackberry and tall fescue.

Wetland FL-D is classified as a Category III wetland using Ecology's rating system. This wetland was not rated using the CCC because it is on the LEKT Reservation.

3.2.5 Other Jurisdictional Waters

At the far northern end of the federal levee alignment is the MHHW tide line. The MHHW tide line for this area is 9.3 feet.

The outlet for the existing fish hatchery runs under the federal levee south of Lower Elwha Road. At the culvert under the levee, the channel is approximately 10 feet wide. The channel forks with the main stem heading to the Elwha River and a side channel heading north (Photos 1 and 2 in Appendix C). The side channel runs north for approximately 90 feet adjacent to the federal levee before turning west to rejoin the main stem of the drainage. The riparian area around this channel contains red alder, salmonberry, Himalayan blackberry, osoberry, and youth-on-age.

The Elwha River OHWM is close to the base of the federal levee in multiple locations. These areas are shown on Figures 5 and 6. The OHWM model also includes the fish hatchery outlet with the Elwha River OHWM.

3.3 NEW FISH HATCHERY

No wetlands or other jurisdictional waters are located within the potential construction disturbance footprint of the new fish hatchery. This project site is in a field dominated by Canada thistle and tall fescue bordered on the north by an upland forest.

3.4 TRIBAL WASTEWATER TREATMENT FACILITY

No wetlands or other jurisdictional waters are located within the potential construction disturbance footprint of the tribal wastewater treatment facility. This project site is in a field dominated by Canada thistle and tall fescue bordered on the south by an upland forest.

3.5 FISH HATCHERY WATER PIPELINE AND LEVEE EXTENSION

The fish hatchery water pipeline and levee extension route runs north from the Washington Department of Fish and Wildlife (WDFW) fish rearing and industrial water channels parallel to the existing industrial water pipeline. Wetland WPL-1 and Wetland WPL-2 are located within

this project area (Figure 8). In addition, Wetlands LA3-1, LA3-2, and LA3-3 are located south of the proposed fish hatchery (Figure 7).

3.5.1 Wetland WPL-1

Wetland WPL-1 is a palustrine emergent wetland that originates from a spring. The spring is located at the toe of the slope immediately north of the WDFW facility. The water from the spring flows north, bounded on the west by an access road and on the east by a slope. The water exits the wetland through a culvert under the access road. Wetland WPL-1 is classified as depressional under the HGM classification system.

Wetland WPL-1 was inundated at the time of the field visit on July 27, 2005, with greater than one foot of standing water in the deepest part of the wetland. The soil in Wetland WPL-1 is a gray (10YR 5/1) loamy clay that is completely saturated.

The wetland contains many obligate wetland plant species including small-fruited bulrush, sawbeak sedge (*Carex stipata*), water parsley, greater duckweed, and small-flowered forget-me-not (*Myosotis laxa*). Lady fern, mannagrass, Nootka rose, and small patches of reed canarygrass (*Phalaris arundinacea*) are also present.

Wetland WPL-1 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.5.2 Wetland WPL-2

Wetland WPL-2 is a palustrine emergent wetland downstream of WPL-1. The wetland appears to have been formed by the construction of the road. Water backs up behind the road, creating wetland conditions. The water exits the wetland through a culvert under the road. Wetland WPL-2 is classified as riverine under the HGM classification system.

Wetland WPL-2 was inundated at the time of the field visit on July 27, 2005, with over 6 inches of standing water in the deepest part of the wetland. The soil in Wetland WPL-2 is a very dark gray (10YR 3/1) silty clay that is completely saturated. The wetland is dominated by wetland plant species including water parsley, greater duckweed, creeping buttercup, and mannagrass.

Wetland WPL-2 is a Category III wetland according to Ecology's rating system. This wetland was not rated using the CCC because it is on the LEKT Reservation.

3.5.3 Wetlands LA3-1, LA3-2, LA3-3

Three wetlands are present at the northern end of the Alternative 3 route. These wetlands are palustrine emergent wetlands adjacent to a gravel road. These wetland areas appear to be topographic low spots that collect water early in the growing season. Water also appears to cover the road early in the growing season. Wetlands LA3-1, LA3-2, LA3-3 are classified as depressional under the HGM classification system.

All three wetlands contained moist soil at the time of the field visit on July 27, 2005. The soil ranges from a very dark gray brown (10YR 3/2) silty clay loam to a dark gray (2.5 4/1 and 10YR 4/1) silty clay with common redoximorphic features which are brown (7.5YR 4/3) to yellowish brown (10YR 5/6). The soil profile contains gravel and wood. Some soil pits did not have distinct horizonation, most likely due to construction and use of the adjacent road.

The wetlands are dominated by creeping buttercup. Other species include large-leaved avens (*Geum macrophyllum*), stinging nettle, creeping bentgrass (*Agrostis stolonifera*), and youth-on-age (*Tolmiea menziesii*). The wetlands are adjacent to an upland forest with red alder, osoberry, swordfern, youth-on-age, salmonberry, and western redcedar.

Wetlands LA3-1, LA3-2, and LA3-3 are Category IV wetlands according to Ecology's rating system. These wetlands were not rated using the CCC because they are on the LEKT Reservation.

3.5.4 Other Jurisdictional Waters

There are additional jurisdictional waters in this project area. Wetland WPL-1 drains to a stream through a culvert under an access road. This stream leads to WPL-2 and the Elwha River floodplain.

Another jurisdictional water is at the intersection of the federal levee access road and the industrial pipeline road (Figure 7). A gully leads down a steep slope into the historic Elwha floodplain. This gully drains wetlands on the plateau above the slope. The gully is a very deep channel that was dry during the field investigations in August 2005 and agency meeting in September 2005. However, water was present in the drainage in February 2006.

During the high rain events in winter 2005/6, water draining down the gully cut a channel approximately 1 foot deep in the federal levee access road (Photos 3 and 4). The channel becomes less distinct and widens the further it gets from the slope. As the channel widens, the area resembles an alluvial fan that is spread on either side of the road (Photo 6). The alluvial fan reaches Wetlands LA3-1 and LA3-2.

This alluvial fan contains sediment deposits, watermarks, and wrack lines (Photo 7). These features show that at the highest flows, water drained both towards and away from the Elwha River. The sediment deposits were 225 feet at the widest spot, measured from center of road toward the Elwha River.

The portion of this feature within the potential construction disturbance footprint is the newly cut channel and part of the alluvial fan. There is no surface water connection to the current alignment of the Elwha River. However, since the drainage does head toward the Elwha and enters the historic floodplain, the Corps will most likely view this feature as non-isolated and thus regulate it.

3.6 PORT ANGELES WATER TREATMENT PLANT

The Port Angeles Water Treatment Plant potential construction disturbance footprint is at the City of Port Angeles landfill. The landfill is under active use and contains many weedy non-native species including Scot's broom (*Cytisus scoparius*), Canada thistle, tall fescue, and lambs-quarters (*Chenopodium album*). One wetland area (WTP-1) is present in the southwestern corner of the property, west of the compost facility (Figure 12). No other jurisdictional waters are present within the Port Angeles Water Treatment Plant potential construction disturbance footprint.

3.6.1 Wetland WTP-1

Wetland WTP-1 is a palustrine emergent wetland in a segment of a ditch which parallels the western boundary of the landfill property. Earlier in the growing season water appears to run north in this ditch towards the stormwater ponds. Wetland WTP-1 is classified as depressional under the HGM classification system.

The soil in Wetland WTP-1 is a gray (2.5Y 4/2) silty clay loam in the upper 3 inches. Below this surface layer is gray sandy loam with common, fine, dark yellowish brown (10YR 4/6) redoximorphic features. This profile contains a lot of gravel and cobble.

The wetland is dominated by soft rush (*Juncus effusus*), colonial bentgrass, and Watson willowherb. The wetland portion of the ditch is flanked both upstream and downstream by upland species such as bull thistle (*Cirsium vulgare*) and Scot's broom.

Wetland WTP-1 is rated as a Category IV according to Ecology's rating system. This wetland is located in the City of Port Angeles, which also uses Ecology's rating system. Category IV wetlands in Port Angeles have a 50-foot buffer for high intensity developments and a 25-foot buffer for low intensity developments.

3.6.2 Wetland WP-1

Wetland WP-1 is a palustrine emergent wetland located in the bottom of a ditch south of the Milwaukee Grade. Wetland WP-1 drains west through a culvert to a non-wetland portion of the ditch, which empties over a steep slope to Dry Creek. Dry Creek does not contain any wetlands at the proposed wastewater pipeline crossing, but had flowing water on July 27, 2005. Wetland WP-1 is classified as depressional under the HGM classification system.

Most of Wetland WP-1 was saturated within 12 inches bgs at the time of the field visit on July 27, 2005. At the eastern end of the wetland there were small patches of standing water, up to 3 inches in depth. The soil is a very dark grayish brown (10YR 3/2) loamy sand with distinct, common, fine, strong brown (7.5YR 4/6) redoximorphic features in the upper 4 inches. Below this surface layer is a dark grayish brown (10YR 4/2) loamy sand with gravel and cobble. This layer also has strong brown redoximorphic features. The wetland is dominated by hydrophytic species including water parsley (*Oenanthe sarmentosa*), creeping buttercup (*Ranunculus repens*), and American brooklime (*Veronica americana*). Mannagrass (*Glyceria* sp.), slough sedge, Watson willowherb (*Epilobium ciliatum*), and small-fruited bulrush (*Scirpus microcarpus*) are also present.

Wetland WP-1 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.7 ELWHA WATER TREATMENT PLANT

The Elwha Water Treatment Plant is located adjacent to the WDFW rearing channel and industrial water channels. Wetland investigations for this construction project were conducted on February 20 and 28, 2003 and August 3, 2005. Wetlands A, B, C, D, E, F, and O are located in the vicinity of the Elwha Water Treatment Plant site (Figures 8 and 9).

3.7.1 Wetlands A and B

Wetlands A and B are palustrine emergent wetlands located at the northern end of the industrial channel along its eastern bank. They receive water from the industrial channel and contain areas that appear to be permanently inundated. Wetlands A and B are classified as riverine under the HGM classification system.

The soil in Wetland A is a dark grayish brown (2.5Y 4/2) gravelly sandy clay loam in the upper 10 inches. Below the surface layer is an olive (2.5Y 4/3) gravelly sandy loam. The soil in Wetland B is a dark gray (10YR 4/1) silty clay. Both wetlands are dominated by reed canarygrass. They also contain American brooklime, small-flowered forget-me-not, velvetgrass, bluegrass (*Poa* sp.), and Canada thistle.

Wetlands A and B are Category IV wetlands according to Ecology's rating system and Class III wetlands according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.7.2 Wetlands C and D

Wetlands C and D are part of the same palustrine forested, scrub-shrub, and emergent wetland complex east of the industrial channel. The dominant tree species in this wetland include red alder and western redcedar. Salmonberry, reed canarygrass, spurless balsam (*Impatiens ecalcarata*), and American brooklime are also present. Wetland C includes large patches of open water containing habitat features such as snags and floating logs. A stream flows into Wetland D and is one of the sources of water to the wetland complex. Water flows out of Wetland C into the industrial channel. Wetlands C and D are separated by a utility line right-of-way that is subject to regular clearing. Both Wetland C and D are classified as depressional wetlands under the HGM classification system.

Wetlands C and D are both located outside the potential construction disturbance footprint of the Elwha Water Treatment Plant. Both wetlands are Category II wetlands according to Ecology's rating system and Class II wetlands according to the CCC. Class II wetlands in Clallam County have a 150-foot buffer for major new developments and a 75-foot buffer for minor new developments.

3.7.3 Wetland E

Wetland E is a palustrine emergent wetland located on either side of overflow channel A, at the southern end of the WDFW facilities. It is an emergent wetland dominated by spike bentgrass (*Agrostis exarata*) and American brooklime. At the time of the site visit in February 2003, much of the vegetation was inundated. Wetland E is classified as a riverine wetland under the HGM classification system.

Wetland E is a Category IV wetland according to Ecology's rating system and Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.7.4 Wetland F

Wetland F contains both palustrine forested and palustrine emergent plant communities. This wetland is located at the east end of overflow channel B. Channel B drains along the north end of the WDFW facilities to the Elwha River. The wetland is a thin band located along the edge of the overflow channel and a backwater pond. The wetland receives water from the industrial channel and contains areas that appear to be permanently saturated. Wetland F is classified as riverine under the HGM classification system.

The soil in Wetland F was a very dark grayish brown (10YR 3/2) silt loam. Emergent communities are dominated by reed canarygrass and forested communities are dominated by red alder.

Wetland F is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.7.5 Wetland O

Wetland O is a palustrine emergent wetland located on the banks of an Elwha River side channel, near the outlet of overflow channel A. This wetland contains drift lines and water marks indicating the presence of flooding and inundation at other times of the year. The soil in the wetland was moist at the time of the field visit on August 3, 2005. Wetland O is classified as riverine under the HGM classification system.

The alluvial soil to 10 inches is gleyed (N3) silt loam with prominent coarse brown (7.5YR 4/4) redoximorphic features. The wetland is dominated by hydrophytic plant species including slender rush (*Juncus tenuis*), water foxtail, and simplestem burreed (*Sparganium emersum*). The wetland also contains small-flowered forget-me-not, Watson willowherb, and jointed rush (*Juncus articulatus*).

Wetland O is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.7.6 Other Jurisdictional Waters

The OHWM of the Elwha River is within the potential construction disturbance footprint of the Elwha Water Treatment Plant. In addition, the industrial water channels and overflow channels associated with the existing WDFW rearing channel and industrial water pipeline are also potentially jurisdictional waters. These features were all surveyed during the field investigations.

3.8 PORT ANGELES RANNEY COLLECTOR MODIFICATION

The Port Angeles Ranney Collector is located near the outlet for the WDFW rearing channel. A side channel of the Elwha River is very near this site. However, there are no wetlands within this potential construction disturbance footprint. However, the OHWM of the Elwha River is adjacent to the Port Angeles Ranney Collector (Figure 9).

3.9 FLOOD CONTROL LEVEE

The potential construction disturbance footprint of the flood control levee does not contain any wetlands. However, Wetlands E and F are located nearby and are described in Section 3.7. In addition, overflow channel A of the industrial channel and WDFW rearing channel outfall are both in the vicinity of the flood control levee alignment (Figure 9).

3.10 CROWN Z ROAD IMPROVEMENTS

Crown Z Road is located off of Elwha River Road on a steep slope. Wetlands were not found within the potential construction disturbance footprint for improvements to Crown Z Road. However, the OHWM of the Elwha River does intersect the existing road as it enters the floodplain.

3.11 ELWHA SURFACE WATER INTAKE

Wetland investigations were conducted for the Elwha Surface Water Intake on June 14 and 15, 2004. Four wetlands (Wetlands G through J) were identified within this potential construction disturbance footprint (Figure 13).

3.11.1 Wetland G

Wetland G is a palustrine scrub-shrub wetland originating from a seep located on the upslope portion of Sampson Road along the west bank of the Elwha River. The seep drains to a culvert under the road. Wetland G is classified as slope under the HGM classification system.

The soil in Wetland G is a very dark gray (10YR 3/1) clay loam in the upper 7 inches. Below the surface layer is very dark gray loam with common, fine, strong brown (7.5YR 5/8) redoximorphic features. The dominant vegetation is devil's club (*Oplopanax horridus*), salmonberry, skunk cabbage, tall mannagrass (*Glyceria elata*), youth-on-age, Siberian miner's lettuce (*Claytonia sibirica*), and lady fern.

Wetland G is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.11.2 Wetland H

Wetland H is a palustrine emergent wetland also located on the upslope portion of the county access road along the west bank of the Elwha River. This wetland is at the base of the slope that the access road crosses, south of Wetland G. The vegetation in this wetland includes tall mannagrass, stinging nettle, creeping buttercup, American brooklime, and Watson willowherb. A few salmonberry and thimbleberry (*Rubus parviflorus*) plants are located at the edge of the wetland. This wetland may drain to a pond located west of the study area. Wetland H is classified as depressional under the HGM classification system.

Wetland H is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.11.3 Wetland I

Wetland I is located on the west bank of the Elwha River and contains both palustrine scrub-shrub and palustrine emergent plant communities. A dirt road passes through the middle of the wetland. The wetland contained standing water at the time of the field visit on June 14, 2004. Wetland I is classified as riverine under the HGM classification system.

The soil in Wetland I is a dark gray (10YR 4/1) clay in the upper 6 inches. Below the surface layer is a very dark gray (10YR 3/1) clay with strong brown (7.5YR 5/6) redoximorphic features. The emergent community is dominated by creeping buttercup and reed canarygrass. Other herbs present include water forget-me-not (*Myosotis scorpoides*), slough sedge, beaked sedge (*Carex utriculata*), common spike-rush, and water foxtail. The scrub-shrub community is dominated by Sitka willow, Nootka rose, and red-osier dogwood.

Wetland I is a Category III wetland according to Ecology's rating system and a Class II wetland according to the CCC. Class II wetlands in Clallam County have a 150-foot buffer for major new developments and a 75-foot buffer for minor new developments.

3.11.4 Wetland J

Wetland J is a palustrine forested wetland located on an island in the Elwha River. The major source of water for this wetland is from the Elwha River. The soil was saturated at the northern end of the island within 12 inches bgs at the time of the field visit on June 15, 2005. Wetland J is classified as a riverine wetland under the HGM classification system.

The soil in Wetland J is a black (7.5YR 2.5/1) clay loam in the upper 8 inches. Below the surface layer is a very dark gray (10YR 3/1) clay. The dominant vegetation includes Sitka willow and red alder. Black twinberry, creeping buttercup, and bluegrass are also present.

Wetland J is a Category III wetland according to Ecology's rating system and a Class II wetland according to the CCC. Class II wetlands in Clallam County have a 150-foot buffer for major new developments and a 75-foot buffer for minor new developments.

3.11.5 Other Jurisdictional Waters

The Elwha Surface Water Intake potential construction footprint is within a wide spot of the Elwha River floodplain. As such, much of the project area is within the OHWM according to the modeling done by Reclamation. This project area also contains flood channels that are activated in the winter (Photo 13). The Corps recommended that these be mapped separately. However, these channels are within the OHWM and thus are already captured with the jurisdictional boundary.

In addition, a "Talent" ditch is present along Sampson Road (Photo 10). This ditch begins just uphill of Wetland G. The ditch receives water from the Wetland G seep and surface water runoff from the road. The ditch is unvegetated and contains evidence of scour. Most of the upper part of the ditch drains through a culvert under Sampson Road and down a steep slope to the Elwha River (Photo 11). However, some water continues to follow the ditch down to the floodplain. During this last winter, the water has started to drain across the dirt road and towards the Elwha River. However, there is no present surface water connection to the Elwha River (Photo 12).

The portion of the "Talent" ditch adjacent to Sampson Road is on average 12 inches wide with an average scour depth of 0.5 inch. Downslope of the culvert under Sampson Road, the drainage is 18 inches wide with an average scour depth of 1 inch.

3.12 DRY CREEK WATER ASSOCIATION EXISTING WELL FIELD

No wetlands or other jurisdictional waters were located in the Dry Creek Water Association existing well field. The well field is dominated by herbaceous species including stinging nettle, colonial bentgrass, quackgrass, and velvetgrass. The area is in the floodplain of the Elwha River, but shows no evidence of recurrent saturation or inundation.

3.13 DRY CREEK WATER ASSOCIATION ALTERNATIVE WELL FIELD

The potential construction disturbance footprint for the Dry Creek Water Association alternative well field location is located east of the county road just south of Elwha River Road. The proposed well field is near Wetlands G and H which are described in Section 3.10. The proposed well field project includes a pipeline that would extend east along Elwha River Road to Laird Road. Two wetlands are located on this proposed pipeline route. Wetland ER-1 is located north of Elwha River Road and Wetland ER-2 is located south of Elwha River Road (Figure 15).

3.13.1 Wetland ER-1

Wetland ER-1 contains both palustrine forested and palustrine scrub-shrub plant communities. The wetland is located north of the Elwha River Road between Laird Road and the first

residence. The large wetland continues north of the survey area. Wetland ER-1 is classified as depressional under the HGM classification system.

The soil in Wetland ER-1 is a very dark grayish brown (10YR 3/2) coarse gravelly sandy clay loam in the upper eight inches with common yellowish red (5YR 4/6) redoximorphic features. Between 8 and 16 inches, the soil is a very dark grayish brown gravel containing prominent strong brown (7.5YR 5.8) redoximorphic features. The wetland is dominated by Douglas-fir, Hooker willow, red-osier dogwood, and slough sedge. Other species present include red alder velvetgrass, bentgrass, soft rush, and western red cedar.

Wetland ER-1 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.13.2 Wetland ER-2

Wetland ER-2 is a palustrine emergent wetland ditch paralleling the south side of the Elwha River Road between Laird Road and the first residence. The wetland is about 400-feet long and 2-feet wide encompassing the bottom of the roadside ditch. Wetland ER-2 is classified as depressional under the HGM classification system.

The soil could not be profiled because of rock refusal in the roadside ditch. The wetland is dominated by bentgrass, soft rush and velvetgrass. Other species present, but growing outside and adjacent to the ditch, include red alder, sweet vernal grass, black cottonwood and Douglas fir.

Wetland ER-2 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.13.3 Other Jurisdictional Waters

A vegetated "Talent" ditch is present along the south side of Elwha River Road (Photo 9). The eastern portion of the "Talent" ditch drains east into Wetland ER-2. The western portion of the ditch drains west and receives water from a north draining ditch near a driveway. At the western end of the study area the ditch becomes a creek with riparian vegetation and pools and riffles. This ravine leads to the Elwha River floodplain. Here the ditch is average 4 feet wide and 8 inches deep.

The north side of the road does not contain a "Talent" ditch running parallel to the road. However, there is a ditch that leads north. This ditch is 12 inches wide with an average scour depth of 1 inch. It drains some water from the south ditch.

3.14 PRIVATE RESIDENCES PROTECTION – RIVER MILE 3

There are three private residences in the vicinity of River Mile (RM) 3 of the Elwha River that may require modifications to protect either the houses or wells from the post-dam removal floods. Two of the residences are located on the west side of the river. Four wetlands were located within the vicinity of these private residences: Wetlands K, L, M, and N (Figure 13). The OHWM of the Elwha is also in the vicinity of these private residences.

The third house is located on the east side of the river. Access was denied to enter this private residence and this property was not investigated.

3.14.1 Wetland K

Wetland K is a palustrine forested wetland located under a weeping willow tree (*Salix babylonica)* near an abandoned house. The wetland appears to be isolated in a depression surrounded by Himalayan blackberry. Wetland K is classified as depressional under the HGM classification system.

The soil in Wetland K is very dark gray (10YR 3/1) in the upper 4 inches. Below this surface layer the soil is black (2.5Y 3/1). The soil contains debris in the profile, including wood and blankets. The wetland is dominated by creeping buttercup, giant horsetail, large-leaved avens, and the weeping willow tree.

Wetland K is a Category IV wetland according to Ecology's rating system and a Class IV wetland according to the CCC. Class IV wetlands in Clallam County have a 50-foot buffer for major new developments and a 25-foot buffer for minor new developments.

3.14.2 Wetland L

Wetland L contains both palustrine scrub-shrub and palustrine emergent plant communities. The wetland is located between two gravel paths and contains two open water lobes. Wetland L receives runoff from Wetland H via a small swale and culvert under one of the gravel paths. Both lobes of Wetland L contained approximately one foot or more of water during the site visit on August 2, 2005. This wetland likely receives much of its water from groundwater discharge and a small amount of surface runoff from adjacent areas. Wetland L is classified as a depressional wetland using the HGM classification system.

Soil conditions matched the Neilton very gravelly sandy loam description in the NRCS soil survey. The soils consist of a dark gray (2.5Y 4/1) gravelly sandy loam 8 inches thick containing strong brown (7.5YR 5/8) and yellowish red (5YR 5/8) redoximorphic features. The next 8 inches before rock refusal is a very dark gray (10YR 3/1) loamy sand which contains gravel and cobble. The sample plot located on an isthmus between the two ponded sections was dominated by small-flowered forget-me-not, colonial bentgrass, creeping buttercup, salmonberry, and red alder. Ponded areas have white water buttercup (*Ranunculus aquatilis*), Canada waterweed (*Elodea canadensis*), simplestem burreed, needle spikerush (*Eleocharis acicularis*). Pacific

willow (*Salix lucida* ssp. *lasiandra*), black cottonwood, and reed canarygrass were also present in the wetland.

Wetland L is a Category III wetland according to Ecology's rating system and a Class II wetland according to the CCC. Class II wetlands in Clallam County have a 150-foot buffer for major new developments and a 75-foot buffer for minor new developments.

3.14.3 Wetland M

Wetland M is a palustrine emergent wetland located between the base of a slope and a gravel road/driveway. A seep appears to be the major water source for this wetland. The slope adjacent to the wetland shows signs of slumps. Wetland M is classified as depressional under the HGM classification system.

The soil in Wetland M is very dark grayish brown (10YR 3/2) in the upper 3 inches. Below this surface layer is a very dark grayish brown (2.5Y 3/2) loamy sand with medium, common, prominent, strong brown (7.5YR 5/6) redoximorphic features. The wetland is dominated by creping buttercup, colonial bentgrass, and salmonberry. Reed canarygrass, youth-on-age, and creeping buttercup are also present.

Wetland M is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.14.4 Wetland N

Wetland N is a palustrine emergent wetland located near a private residence at the base of a slope. The source of water for the wetland appears to be seeps at the base of the slope. Wetland N is classified as depressional under the HGM classification system.

Portions of Wetland N were saturated within 12 inches bgs at the time of the field visit on August 2, 2005. The soil is a very dark gray (10YR 3/1) clay loam to 16 inches with a brown (10YR 4/3) gravelly sandy loam layer present from 6 to 10 inches.

The vegetation in the wetland is dominated by giant horsetail, common comfrey (*Symphytum officinale*), and creeping buttercup. There is also some salmonberry, devil's club, Alaska brome, and great betony (*Stachys mexicana*).

Wetland N is a Category IV wetland according to Ecology's rating system and a Class IV wetland according to the CCC. Class IV wetlands in Clallam County have a 50-foot buffer for major new developments and a 25-foot buffer for minor new developments.

3.15 ELWHA HEIGHTS WATER PIPELINE

The Elwha Heights water pipeline runs on the west side of Rife Road just north of the intersection with Laird Road (Figure 11). At the intersection with Walker Ranch Road, the alignment heads west on the north side of Walker Ranch Road. The alignment then runs west

through an actively managed forested area with trees of varying ages. The alignments ends at the Elwha Heights housing development off of Edgewood Road. Eleven wetlands (EH-1 through EH-11) were observed within the vicinity of the Elwha Heights water pipeline route.

3.15.1 Wetland EH-1

Wetland EH-1 is a scrub-shrub wetland on the west side of Rife Road. The source of water for the wetland appears to be surface water runoff from the surrounding upland areas. Wetland EH-1 is classified as depressional under the HGM classification system.

The soil in Wetland EH-1 was moist within 12 inches bgs at the time of the field visit on June 15, 2004. The soil is a very dark grayish brown (10YR 3/2) clay loam to 6 inches containing fine, few strong brown (7.5YR 5.8) redoximorphic features. Below this surface layer is a very dark grayish brown (2.5Y 3/2) sandy clay loam layer with strong brown (7.5YR 4/6) redoximorphic features present from 6 to 12 inches. A dark yellowish brown (10YR 3/4) sandy loam with yellowish brown (10YR 5/8) redoximorphic features is present below 12 inches.

This wetland is dominated by Nootka rose and reed canarygrass. Red-osier dogwood, red alder, creeping buttercup, and bluegrass are also present.

Wetland EH-1 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.15.2 Wetland EH-2

Wetland EH-2 is a palustrine emergent wetland located in a ditch on the south side of Walker Ranch Road. The ditch provides the major source of water for the wetland. Wetland EH-2 is classified as depressional under the HGM classification system.

The soil in Wetland EH-2 was saturated at 12 inches bgs at the time of the field visit on June 15, 2004. The soil is a black (2.5Y 3/1) silty clay loam in the upper 6 inches. Below this surface layer the soil is very dark grayish brown (10YR 3/2) gravelly loam with common, medium, dark yellowish brown (10YR 3/6) redoximorphic features. The wetland is dominated by reed canarygrass and creeping buttercup.

Wetland EH-2 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.15.3 Wetland EH-3

Wetland EH-3 is located north of Walker Ranch Road and contains a palustrine emergent plant community. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-3 drains to a "Talent" ditch to the east. Wetland EH-3 is classified as depressional under the HGM classification system.

The soil in Wetland EH-3 was saturated to the surface at the time of the field visit on February 2, 2006. The soil is a very dark grayish brown (10YR 3/2) silty clay loam in the upper 8 inches with few, distinct, fine dark yellowish brown (10YR 4/6) redoximorphic features. Below the surface layer is a gray (10YR 5/1) sandy loam with common, distinct, medium, dark yellowish brown (10YR 4/6) redoximorphic features. The plant community is dominated by velvetgrass, tall fescue, and soft rush. Other species present include Sitka willow and colonial bentgrass.

Wetland EH-3 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.15.4 Wetland EH-4

Wetland EH-4 is located at the west end of Walker Ranch Road, near the intersection of two driveways. This wetland contains a palustrine emergent plant community. A portion of Wetland EH-4 was inundated at the time of the field visit on February 23, 2006. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-4 drains to a "Talent" ditch to the east. The wetland is classified as depressional under the HGM classification system.

The soil in Wetland EH-4 is a dark grayish brown (10YR 4/2) sandy clay loam in the upper 10 inches. The plant community is dominated by creeping buttercup, tall fescue, and bentgrass.

Wetland EH-4 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.15.5 Wetland EH-5

Wetland EH-5 is located south of a gravel road and contains a palustrine emergent plant community. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-5 is classified as depressional under the HGM classification system.

The soil in Wetland EH-5 was saturated to the surface at the time of the field visit on February 2, 2006. The soil is a very dark grayish brown (10YR 3/2) sandy clay loam in the upper 7 inches. Below the surface layer is a grayish brown (10YR 5/2) sandy loam with common, prominent, medium, strong brown (7.5YR 5/6) redoximorphic features. The plant community is dominated by velvetgrass, creeping buttercup, and orchardgrass. Some stinging nettle and red-osier dogwood are present.

Wetland EH-5 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments. This wetland is located in a depression and does not appear to have an outlet. This wetland appears to be hydrologically isolated and may not be regulated by the Corps.

3.15.6 Wetland EH-6

Wetland EH-6 is located on either side of a dirt road west of Walker Ranch Road. The wetland contains both a small palustrine scrub-shrub and a small emergent plant community. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-6 is classified as depressional under the HGM classification system.

The soil in Wetland EH-6 was saturated to the surface at the time of the field visit on February 23, 2006. The soil is a dark grayish brown (10YR 4/2) clay loam in the upper 9 inches with common, faint, medium dark yellowish brown (10YR 3/6) redoximorphic features. Below the surface layer is a brown (10YR 4/3) sandy loam with common, distinct, medium, dark yellowish brown (10YR 4/6) redoximorphic features. The scrub-shrub community is dominated by Nootka rose. The emergent plant community is dominated by velvetgrass, creeping buttercup, and creeping bentgrass.

Wetland EH-6 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments. This wetland is located in a depression and does not appear to have an outlet. This wetland appears to be hydrologically isolated and may not be regulated by the Corps.

3.15.7 Wetland EH-7

Wetland EH-7 is located in a young second-growth Douglas-fir/western redcedar/Sitka spruce stand. This wetland contains a small palustrine scrub-shrub plant community and a small palustrine emergent plant community. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-7 is classified as depressional under the HGM classification system.

The soil in Wetland EH-7 was saturated to the surface at the time of the field visit on February 23, 2006. The soil is a dark grayish brown (10YR 4/2) silty clay loam in the upper 14 inches with few, distinct, fine dark yellowish brown (10YR 4/6) redoximorphic features. Below the surface layer is a grayish brown (10YR 5/2) loam with many, distinct, medium, yellowish brown (10YR 5/6) redoximorphic features. The scrub-shrub community is dominated by hardhack and Nootka rose. The emergent plant community is dominated by creeping buttercup, creeping bentgrass, and slough sedge.

Wetland EH-7 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments. This wetland is located in a depression and does not appear to have an outlet. This wetland appears to be hydrologically isolated and may not be regulated by the Corps.

3.15.8 Wetland EH-8

Wetland EH-8 is located in a young second-growth Douglas-fir/western redcedar/Sitka spruce stand. This wetland contains a small palustrine scrub-shrub plant community and a small palustrine emergent plant community. The sources of water for the wetland appear to be

precipitation and surface water runoff. Wetland EH-8 is classified as depressional under the HGM classification system.

The soil in Wetland EH-8 was saturated to the surface at the time of the field visit on February 23, 2006. The soil is a very dark grayish brown (10YR 3/2) clay loam in the upper 9 inches. Below the surface layer is a very dark grayish brown (10YR 3/2) loam with common, medium, dark brown (7.5YR 3/3) redoximorphic features. The scrub-shrub community is dominated by Sitka spruce, red alder, and western redcedar. The emergent plant community is dominated by velvetgrass, creeping bentgrass, and slough sedge.

Wetland EH-8 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments. This wetland is located in a depression and does not appear to have an outlet. This wetland appears to be hydrologically isolated and may not be regulated by the Corps.

3.15.9 Wetland EH-9

Wetland EH-9 is located in a young second-growth Douglas-fir/western redcedar/Sitka spruce stand. This wetland contains a palustrine scrub-shrub plant community and a palustrine emergent plant community. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-9 is classified as depressional under the HGM classification system.

The soil in Wetland EH-9 was saturated to the surface at the time of the field visit on February 23, 2006. The soil is a dark gray brown (10YR 2/2) clay loam in the upper 13 inches. Below the surface layer is a brown (10YR 5/3) clay loam with common, medium, yellowish brown (10YR 5/8) redoximorphic features. The scrub-shrub community is dominated by hardhack and Nootka rose. The emergent plant community is dominated by creeping buttercup, creeping bentgrass, and slough sedge.

Wetland EH-9 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.15.10 Wetland EH-10

Wetland EH-10 is located in a young second-growth Douglas-fir/western redcedar/Sitka spruce stand. This wetland contains a palustrine emergent plant community and an aquatic bed/open water habitat. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-10 is classified as depressional under the HGM classification system. The soil in Wetland EH-10 was saturated to the surface at the time of the field visit on February 23, 2006.

Wetland EH-10 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments. This wetland is

located in a depression and does not appear to have an outlet. This wetland appears to be hydrologically isolated and may not be regulated by the Corps.

3.15.11 Wetland EH-11

Wetland EH-11 is located west of Edgewood Road next to a woodland trail. This wetland contains a palustrine scrub-shrub plant community and an open water habitat. The sources of water for the wetland appear to be precipitation and surface water runoff. Wetland EH-11 is classified as depressional under the HGM classification system.

The soil at the edges of Wetland EH-11 was saturated to the surface at the time of the field visit on February 23, 2006. Much of the wetland contained over 1 foot of standing water at the time of the site visit. The plant community contains salmonberry, western redcedar, and slough sedge.

Wetland EH-11 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.15.12 Other Jurisdictional Waters

A "Talent" ditch is located north of Walker Ranch Road that runs north (Photo 8). It collects water from a ditch and Wetland EH-2 on the south side of Walker Ranch Road. The "Talent" ditch is 12 inches wide with an average scour depth of 1 inch.

3.16 ELWHA DAM REMOVAL

The Elwha Dam site is surrounded by a mixed deciduous/coniferous upland forest with Douglas-fir, bigleaf maple, and a few western hemlock (*Tsuga heterophylla*). Cleared areas next to the south end of the lake contain everlasting pea (*Lathyrus latifolius*), bentgrass, and smooth hawksbeard (*Crepis capillaris).* Two wetlands (ED-1 and ED-2) were found within the Elwha Dam potential construction disturbance footprint (Figure 16).

3.16.1 Wetland ED-1

Wetland ED-1 is a small, palustrine emergent wetland that originates from a seep between a road and a rock face. The wetland drains through a culvert under the dam access road to the Elwha River. The soil in Wetland ED-1 is very dark grayish brown (10YR 3/2) that was saturated at the time of the field visit on July 28, 2005. The wetland is dominated by creeping buttercup and also contains velvetgrass, sweet coltsfoot (*Petasites frigidus* var. *palmatus*), maidenhair fern (*Adiantum aleuticum*), and youth-on-age. This wetland is classified as depressional under the HGM classification system.

Wetland ED-1 is a Category IV wetland according to Ecology's rating system and a Class IV wetland according to the CCC. Class IV wetlands in Clallam County have a 50-foot buffer for major new developments and a 25-foot buffer for minor new developments.

3.16.2 Wetland ED-2

Wetland ED-2 has both lacustrine littoral emergent and palustrine shrub-scrub communities. This wetland is a narrow fringe along the shore of Lake Aldwell. The lacustrine plant community was inundated at the time of the field visit on July 28, 2005 and contains beaked sedge. The palustrine community had saturated soil within 12 inches bgs. The palustrine community contains red alder, velvetgrass, and sedges (*Carex* sp.). The soil in Wetland ED-2 is a dark brown (7.5YR 3/2) sandy clay loam and very gravelly in the upper 4 inches. Below this surface layer is a black (2.5Y 2.5/1) gravelly sandy loam. Wetland ED-2 is classified as lake-fringe under the HGM classification system.

Wetland ED-2 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.16.3 Other Jurisdictional Waters

There are two streams that drain under the dam access road down a steep slope to the Elwha River. In addition, there is a "Talent" ditch along the south side of the dam access road (Photo 14). This ditch drains to Wetland ED-1. The "Talent" ditch is 10 inches wide with an average scour depth of 0.5 inch. The other jurisdictional water in the area is the OHWM of the Elwha River and Lake Aldwell.

3.17 PRIVATE RESIDENCES PROTECTION – OLYMPIC HOT SPRINGS ROAD

There are seven private residences along Olympic Hot Springs Road that may require modifications to protect either the houses or wells from the post-dam removal floods. Five wetlands were found within the vicinity of these residences. Wetlands PR-1, PR-2 and PR-3 are located west of the road and Wetlands PR-4 and PR-5 are located east of the road (Figure 17) Access was denied to enter the private residence at RM 8.15, therefore this property was not investigated. No other jurisdictional waters were found within the potential construction footprints of these private residences.

3.17.1 Wetland PR-1

Wetland PR-1 is a palustrine forested wetland between a house and a yurt. The wetland is adjacent to a small stream that is a tributary to the Elwha River. The stream flows under Olympic Hot Springs Road near (not through) a culvert into the wetland. The stream channel and surface water disappear before meeting the Elwha River, but it is assumed to contribute water subsurface to the river. PR-1 is classified as depressional under the HGM classification system.

The wetland contained areas where the soil was moist, saturated, and/or inundated at the time of the field visit on July 29, 2005. The soil in Wetland PR-1 is a very dark gray (10YR 3/1) sandy loam. The wetland is dominated by red alder with some salmonberry, creeping buttercup and reed canarygrass. Skunk cabbage (*Lysichiton americanum*), yellow flag (*Iris pseudacorus*),

mannagrass, and small-flowered forget-me-not are near the stream channel. The wetland also contains great betony, stinging nettle, water parsley, and Canada thistle.

Wetland PR-1 is a Category II wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.17.2 Wetland PR-2

Wetland PR-2 is a small palustrine emergent wetland located in an actively grazed pasture. Wetland PR-2 appears to be an isolated wetland at the base of a slope in a depression. PR-2 is classified as depressional under the HGM classification system.

The wetland contained areas where the soil was moist at the time of the field visit on July 29, 2005. The soil in Wetland PR-2 is a very dark gray (2.5Y 3/1) sandy clay loam with faint medium dark reddish brown (5YR 3/4) redoximorphic features. The wetland is dominated by reed canarygrass and wetland pasture grasses.

Wetland PR-2 is a Category IV wetland according to Ecology's rating system and a Class IV wetland according to the CCC. Class IV wetlands in Clallam County have a 50-foot buffer for major new developments and a 25-foot buffer for minor new developments.

3.17.3 Wetland PR-3

Wetland PR-3 is a small palustrine emergent wetland located in a pasture that appears to be an isolated wetland in a depression. This area has been mowed since the delineation on July 29, 2005. PR-3 is classified as depressional under the HGM classification system.

The soil in PR-3 ranges from a dark grayish brown (10YR 4/2) to brown (10YR 5/3) silty clay loam with common, fine, strong brown (7.5YR 4/6) redoximorphic features. The wetland is dominated by northern clustered sedge (*Carex arcta*), spike bentgrass, slough sedge, and Nootka rose.

Wetland PR-3 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.17.4 Wetland PR-4

Wetland PR-4 contains palustrine scrub-shrub and palustrine emergent plant communities. The wetland is isolated in a deep linear depression east of Olympic Hot Springs Road in a fallow field. The hydrologic regime of the wetland is likely surface water runoff from adjacent upslope areas and from direct precipitation. PR-4 is classified as depressional under the HGM classification system.

The soil in PR-4 ranges from a dark grayish brown (10YR 4/2) silt loam with common, fine to medium, yellowish red (5YR 5/8) redoximorphic features overlaying a very dark gray (10YR

3/1) loamy sand. The wetland is dominated by bentgrass, quackgrass, and black cottonwood saplings.

Wetland PR-4 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.17.5 Wetland PR-5

Wetland PR-5 is a small palustrine emergent wetland located in a fallow pasture. This wetland sits in a shallow isolated depression with two concrete structures directly downslope of it. The water source is likely direct precipitation and surface runoff from adjacent upland slopes. PR-5 is classified as a depressional wetland under the HGM classification system.

The soil in PR-5 is a very dark grayish brown (10YR 3/2) very fine sandy loam with common, fine to medium, strong brown (7.5YR 5/8) redoximorphic features overlaying very dark gray (10YR 3/1) loamy sand. The wetland is dominated by spike bentgrass redtop (*Agrostis gigantea),* quackgrass, velvetgrass, and red clover (*Trifolium pratense*). Creeping buttercup and common plantain (*Plantago major*) were also present.

Wetland PR-5 is a Category IV wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.18 TRAINING DIKE MODIFICATION

The training dike is located south of the residences on Olympic Hot Springs Road. There is one wetland (TD-1) in the vicinity of the potential construction disturbance footprint. This wetland lies east of the training dike (Figure 17).

3.18.1 Wetland TD-1

Wetland TD-1 is a long, thin linear wetland containing both palustrine scrub-shrub and palustrine emergent plant communities. The wetland is located on either side of a small permanent groundwater fed stream west of Olympic Hot Springs Road and east of the training dike. This wetland receives water from the groundwater fed stream. TD-1 is classified as riverine under the HGM classification system.

The soil in TD-1 in the upper 10 inches deep is a black (10YR 2/1) gravelly clay loam and matches the soil survey description for this area. The wetland sample plot is dominated by lady fern, youth-on-age, and salmonberry.

Wetland TD-1 is a Category III wetland according to Ecology's rating system and a Class III wetland according to the CCC. Class III wetlands in Clallam County have a 75-foot buffer for major new developments and a 50-foot buffer for minor new developments.

3.18.2 Other Jurisdictional Waters

The OHWM of the Elwha River is also within the potential construction footprint of the training dike modification.

3.19 OLYMPIC HOT SPRINGS ROAD CULVERT REPLACEMENTS

There are culvert replacements proposed for two stream crossings along Olympic Hot Springs Road. The Griff Creek crossing is within the Olympic National Park (Figure 19 and Photo 15) and the Madison Creek Crossing is just north of the Park boundary (Figure 18). Neither of the two culvert replacement potential construction disturbance footprints on Olympic Hot Springs Road contains wetlands. However, the OHWM was measured for each creek at the culvert crossings.

The OHWM of Madison Creek is 12 feet wide upstream of the culvert and 14 feet downstream of the culvert. The OHWM of Griff Creek is 20 feet wide upstream of the culvert and 13 feet downstream of the culvert.

3.20 GLINES CANYON DAM REMOVAL

The Glines Canyon Dam is surrounded by an upland coniferous forest. There is one wetland located within the potential construction disturbance footprint along the shores of Lake Mills (Figure 20). The only other jurisdictional water in the area is the OHWM of the Elwha River and Lake Mills.

3.20.1 Wetland GCD-1

Wetland GCD-1 is a narrow palustrine emergent wetland located along the shore of Lake Mills. The wetland is dominated by bigleaf sedge (*Carex amplifolia*) and velvetgrass with some Watson willowherb, colonial bentgrass, creeping buttercup, field horsetail, and thick-headed sedge (*Carex pachystachya*). The soil is a very dark brown (10YR 2/2) in the upper 6 inches. Below this surface layer is very dark gray (10YR 3/1). Wetland GCD-1 is classified as lake-fringe under the HGM classification system.

Wetland GCD-1 is a Category IV wetland according to Ecology's rating system. This wetland were not rated using the CCC because it is within Olympic National Park.

3.21 NIPPON PAPER INTERNATIONAL IMPROVEMENTS

Most of the Nippon Paper International potential construction disturbance footprint is already paved or graveled and contains no wetlands or other jurisdictional waters. The whole potential construction disturbance footprint is upland with the small amount of existing vegetation consisting of Scot's broom, white sweetclover (*Melilotus alba*), upland grasses, and yarrow (*Achillea millefolium*). However, the site is at the base of the Ediz Hook between a beach (marine system) on the west and a coastal lagoon (estuarine system) on the east. The beach

contains American dunegrass, beach pea, and silver burweed. The lagoon contains pickleweed (*Salicornia virginica*), gumweed (*Grindelia integrifolia*), atriplex (*Atriplex* sp.), and other saltmarsh vegetation.

4.0 WETLAND FUNCTIONS ASSESSMENT

4.1 ECOLOGY METHODOLOGY

The wetlands are grouped into like HGM classifications for the discussion of their functions. The modified version of the HGM classification system as found in the *Washington State Wetland Rating System for Western Washington* (Ecology 2004) was used. The HGM classes found in the project area include: riverine, lake-fringe, slope, and depressional.

4.1.1 Riverine Wetlands

Ten wetlands are riverine wetlands. Wetlands FL-A, O, I, J, and TD-1 are all within the Elwha River floodplain. Wetland WPL-2 is associated with a small tributary to the Elwha River. Wetlands A, B, E, and F are associated with the industrial channels located at the WDFW facilities.

Habitat

The five wetlands within the Elwha River floodplain and Wetland WPL-2 have a high potential to provide habitat. They each have complex vegetation structure and high interspersion of habitats. Many of these wetlands have vegetated plant communities interspersed with or adjacent to open water. The increased structural complexity provided by these different vegetation types optimizes potential breeding areas, protective cover, and food production for the greatest number of species. Interspersion among different physical structures increases the suitability for some wildlife guilds by increasing the number of ecological niches.

These wetlands also have multiple water regimes, including seasonally flooded and permanently flowing stream. Many aquatic species key their life cycle to different water regimes. A wetland with several different water regimes will support more species than a wetland with fewer water regimes. The species diversity in these wetlands is moderate and the number of invasive plants is low.

These wetlands also have a high opportunity to provide habitat. Since the wetlands are located within or immediately adjacent to the Elwha River, most of the wetland buffers are relatively undisturbed, allowing access for many wetland-dependent and wetland-associated species. These wetlands are part of the Elwha River and adjacent riparian corridor, which are used by both terrestrial and aquatic species for migration, foraging, and dispersal.

Wetlands A, B, E, and F have low habitat value due to their small size, low structural complexity, low plant species diversity, and disturbed buffers.

Water Quality

The potential of the all riverine wetlands to improve water quality is moderate to low. Most of the riparian wetlands do not have many depressions. Depressions in riverine wetlands tend to accumulate sediment and the pollutants associated with sediment (phosphorus and some toxics)

because of the reduce water velocities. Wetlands where a larger part of the total area has depressions are relatively better at removing pollutants.

However, the some of the riverine wetlands do contain persistent woody vegetation. Vegetation in a riverine wetland will improve water quality by acting as a filter to trap sediments and associated pollutants. The vegetation also slows the velocity of the water, resulting in the deposition of sediments. Shrubs and trees are considered to be better at resisting water velocities than emergent plants.

The opportunity for the riverine wetlands to improve water quality is low. The opportunity for this function is correlated with pollutant discharge into the river. This in turn, is linked to the amount of development, agriculture, or logging present in the immediate surroundings or upgradient of the contributing basin. There are very few discharge points into the Elwha River and fewer than 10 houses are within 300 feet of the Elwha River.

Hydrology

The riverine wetlands have a high potential to reduce flooding and stream erosion, proportional to the size of the wetland. The larger wetlands have a higher potential to reduce flooding and erosion. In addition, some of the riverine wetlands are dominated by woody species. The woody vegetation acts to slow water velocities and thereby erosive flows. Shrubs and trees are considered to be better at resisting water velocities than emergent plants.

The opportunity for riverine wetlands to reduce impacts of flooding and erosion is based on the presence of human or natural resources that can be damaged by these processes. Because of the two dams and three levees, there are very few structures that can be damaged by the Elwha River. However, during floods, there can still be impacts to human dwellings and salmon redds, as well as to the levees themselves. Therefore, the opportunity of the riverine wetlands to reduce flooding and erosion is moderate. Also, the opportunity for Wetlands A, B, E, and F to reduce flooding is very low since they are located in the industrial channels which have water control structures.

4.1.2 Lake-Fringe Wetlands

Two wetlands are lake-fringe wetlands: ED-2 and GCD-1. ED-2 is adjacent to Lake Aldwell and GCD-1 is adjacent to Lake Mills.

Habitat

The two lake-fringe wetlands have a low potential to provide habitat. They are very small, have a low diversity of vegetation structure, and a low interspersion of habitats, which does not allow for many ecological niches.

The lake-fringe wetlands have a high opportunity to provide habitat. Neither Lake Aldwell nor Lake Mills have any development on their shorelines, with the exception of the dams themselves. Lake Mills is located in Olympic National Park, which has no development upstream of the lake. Since the wetland buffers are relatively undisturbed, access is present for many wetland-dependent and wetland-associated species. These wetlands are part of the overall Elwha River

and adjacent riparian corridor, which are used by both terrestrial and aquatic species for migration, foraging, and dispersal.

Water Quality

The two lake-fringe wetlands provide a moderate function for improving water quality. While they are small, they still have the potential to trap, filter out, or absorb pollutants. Wetland ED-2 is dominated by both herbaceous and woody plants and GCD-1 contains only emergent species. Herbaceous emergent species have been found to sequester metals and remove oils and other organics better than other plant species.

The opportunity for the lake-fringe wetlands to improve water quality is low. The opportunity for this function is correlated with the amount of pollutants discharged into the lake or into the river upstream of the lake. The watershed that drains into Lake Mills is completely within Olympic National Park and contains no source of human pollution. No major pollutant discharges are present upstream of Lake Aldwell.

Hydrology

The two lake-fringe wetlands offer a low to moderate function for reducing shoreline erosion. Vegetation provides a physical barrier to waves and protects the shore from erosion. This protection consists of both shoreline anchoring and the dissipation of erosive forces. Woody vegetation, such as in Wetland ED-2, provides more protection from waves and currents associated with large storms than herbaceous plants.

There is opportunity for the lake-fringe wetlands to protect a shoreline from erosion, if there is some resource that could be impacted by this erosion. These resources include structures downstream, but also can include mature forests surrounding the lake. Since the lakes are behind dams, which regulate the flow of water, the lake-fringe wetlands do not have much opportunity to protect the shorelines downstream of the dams. However, they do offer a slight opportunity to protect the forest along the edges of the lakes.

4.1.3 Slope Wetland

Wetland G is the only wetland identified as a slope wetland within the vicinity of the construction projects.

Habitat

Wetland G has a low potential to provide habitat due to it small size, low structural complexity, low plant species diversity, and disturbed buffers. However, Wetland G has a high opportunity to provide habitat, since it is are part of the overall Elwha River and adjacent riparian corridor, which are used by both terrestrial and aquatic species for migration, foraging, and dispersal.

Water Quality

Wetland G has a low potential for water quality improvement. Slope wetlands do not improve water to the same extent as riverine or depressional wetlands because a slope wetland will tend to release water rather than trap it.

The opportunity for improving water quality is low. There is little evidence that surface runoff from adjacent developed areas enters the wetland. Therefore, few if any pollutants are probably transferred to the wetland.

Hydrology

Wetland G has a low potential for reducing flooding and stream erosion. Slope wetlands do not provide flood storage. However, Wetland G may provide some velocity reduction since it contains rigid, woody vegetation. The opportunity for Wetland G to reduce stream erosion is low, since it is not associated with any stream.

4.1.4 Depressional Wetlands

The majority (35) of the wetlands were identified as depressional wetlands: WP-1, FL-B, FL-C, FL-D, WPL-1, LA3-1, LA3-2, LA3-3, WTP-1, C, D, H, ER-1, ER-2, K, L, M, N, EH-1, EH-2, EH-3, EH-4, EH-5, EH-6, EH-7, EH-8, EH-9, EH-10, EH-11, ED-1, PR-1, PR-2, PR-3, PR-4, and PR-5.

Habitat

Seven depressional wetlands (WPL-1, WP-2, C, D, L, and PR-1) have a high potential to provide habitat. They each have a moderate to high diversity of vegetation structure and interspersion of habitats. These wetlands have multiple plant communities (forested, scrub-shrub, and emergent), some of which are interspersed with open water. The increased structural complexity provided by these different vegetation types optimizes potential breeding areas, protective cover, and food production for the greatest number of species. Interspersion among different physical structures increases the suitability for some wildlife guilds by increasing the number of ecological niches.

These wetlands also have different water regimes including permanently flooded, seasonally flooded, and occasionally flooded. A wetland with several different water regimes will support more species than a wetland with fewer water regimes. The species diversity in these wetlands is moderate and the number of invasive plants is low. In addition, some of the depressional wetlands have special habitat features, such as snags and floating logs. Pileated woodpeckers have been noted in Wetland C, which is an old oxbow, and Wetland WPL-1 has evidence of otter dens.

These wetlands also have a high opportunity to provide habitat. These wetlands have more development within their buffers than the tidal fringe, riverine, and lake-fringe wetlands. However, the development consists of small residences or rural roads. In addition, the depressional wetlands do not have development on all sides. For example, the coastal lagoon has development on one side and a marine shoreline on the other that is appropriate for species migration, foraging, and dispersal.

The remaining depressional wetlands have a low potential to provide habitat. They are small, have limited structural or species diversity, no interspersion of habitats, and no special habitat features. Many of them have very disturbed buffers. For example, the wetlands near the private residences on Olympic Hot Springs Road (PR-2, PR-3, PR-4, and PR-5) have houses and actively grazed pastures within their buffers.

Water Quality

All 35 depressional wetlands have a high potential for water quality improvement. All of the depressional wetlands have persistent vegetation that enhances sediment capture by acting like a filter and causing sediment particles to drop to the bottom of the wetland. The effectiveness of vegetation to trap sediments and pollutants is reduced if the vegetation is grazed and/or not persistent.

The opportunity for improving water quality is low. There is no evidence that much surface runoff from adjacent developed areas enters the wetlands. Therefore, few if any pollutants are probably transferred to the wetlands.

Hydrology

The 35 wetlands have a moderate to high potential to improve hydrologic functions. These wetlands have restricted or no outlets, helping flood attenuation. These wetlands appear to have at least 6 inches of live storage, with the coastal lagoons having several feet. However, these wetlands have a small contributing basin.

The opportunity for most of the depressional wetland to reduce stream erosion is low, since they are disconnected from the Elwha River or other drainages.

4.2 CLALLAM COUNTY AND CITY OF PORT ANGELES METHODOLOGY

Clallam County and the City of Port Angeles require wetlands be assessed based on watershed functions and landscape functions. The watershed functions are determined by wetland hydrology type (listed in Table 2 of CCC 27.12.210) and wetland hydrologic functions. An assessment of the watershed function of the wetlands can be found in Table 4-1. An assessment of landscape functions can be found in Table 4-2.

Table 4-1
Watershed Functions of Wetlands within Clallam County and City of Port Angeles Jurisdiction

Wetland	Hydrology Type[a]	Flood Storage	Floodflow Desynchronization	Streamflow/Channel Maintenance	Groundwater Recharge	Temperature Maintenance	Sediment/Bacteria Removal	Nutrient Removal Opportunity	Toxicant removal opportunity	Seawater Intrusion Prevention	Drinking Water	Water Availability for Waterfowl	Water Availability for Other Wildlife
WP-1	3	L	L	N	L	L	H	L	L	N	L	H	H
WPL-1	3	L	L	N	L	L	H	L	L	N	L	H	H
WTP-1	3	L	L	N	L	L	H	L	L	N	L	H	H
A	8	H	H	H	H	L	H	H	H	N	H	H	H
B	8	H	H	H	H	L	H	H	H	N	H	H	H
C	5	L	H	H	N	H	H	H	H	N	H	H	H
D	5	L	H	H	N	H	H	H	H	N	H	H	H
E	8	H	H	H	H	L	H	H	H	N	H	H	H
F	8	H	H	H	H	L	H	H	H	N	H	H	H
O	8	H	H	H	H	L	H	H	H	N	H	H	H
G	7	L	L	N	H	N	L	H	H	N	H	L	L
H	3	L	L	N	L	L	H	L	L	N	L	H	H
I	8	H	H	H	H	L	H	H	H	N	H	H	H
J	8	H	H	H	H	L	H	H	H	N	H	H	H
ER-1	3	L	L	N	L	L	H	L	L	N	L	H	H
ER-2	3	L	L	N	L	L	H	L	L	N	L	H	H
K	3	L	L	N	L	L	H	L	L	N	L	H	H
L	3	L	L	N	L	L	H	L	L	N	L	H	H
M	3	L	L	N	L	L	H	L	L	N	L	H	H
N	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-1	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-2	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-3	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-4	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-5	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-6	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-7	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-8	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-9	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-10	3	L	L	N	L	L	H	L	L	N	L	H	H
EH-11	3	L	L	N	L	L	H	L	L	N	L	H	H
ED-1	7	L	L	N	H	N	L	H	H	N	H	L	L
ED-2	11	H	H	H	H	L	H	H	H	N	H	H	H
PR-1	8	H	H	H	H	L	H	H	H	N	H	H	H
PR-2	3	L	L	N	L	L	H	L	L	N	L	H	H
PR-3	3	L	L	N	L	L	H	L	L	N	L	H	H

Table 4-1 (Continued)
Watershed Functions of Wetlands within Clallam County and City of Port Angeles Jurisdiction

Wetland	Hydrology Type[a]	Flood Storage	Floodflow Desynchronization	Streamflow/Channel Maintenance	Groundwater Recharge	Temperature Maintenance	Sediment/Bacteria Removal	Nutrient Removal Opportunity	Toxicant removal opportunity	Seawater Intrusion Prevention	Drinking Water	Water Availability for Waterfowl	Water Availability for Other Wildlife
PR-4	3	L	L	N	L	L	H	L	L	N	L	H	H
PR-5	3	L	L	N	L	L	H	L	L	N	L	H	H
TD-1	8	H	H	H	H	L	H	H	H	N	H	H	H

[a]Hydrology Type: 3 – wetlands formed in very deep soils occurring in basins on low terraces formed in alluvium, water is perched in an enclosed basin; 5 – wetlands formed in very deep soils on level terraces and in valleys, water is from unconfined aquifers and initiates or supplements streams; 7 – wetland formed along the margin of surficial geological units that have a restrictive layer, water is perched or from unconfined aquifer; 8 – wetlands formed within the floodplain of streams, water source is from stream and wetland discharges to stream; 11 – wetlands associated with lakes; 12 – wetlands located along marine shorelines behind coastal dunes

H = high functional value, L = performs this function to a limited degree, N = does not perform this function

Table 4-2
Landscape Functions of Wetlands within Clallam County and City of Port Angeles Jurisdiction

Wetland	Habitat Type	Significant Habitat Features	Anadromous Fish Use	Significant Wildlife Movement Corridor
WP-1	PEM	None	No	No
WPL-1	PEM	None	No	Elwha River Corridor
WTP-1	PEM	None	No	No
A	PEM	Industrial channel	Yes	Elwha River Corridor
B	PEM	Industrial channel	Yes	Elwha River Corridor
C	PFO / PEM / PSS	Snags, floating logs, open water	Yes	Elwha River Corridor
D	PFO	None	Yes	Elwha River Corridor
E	PEM	Industrial channel	Yes	Elwha River Corridor
F	PFO / PEM	Industrial channel	Yes	Elwha River Corridor
O	PEM	On banks of Elwha River	Yes	Elwha River Corridor
G	PSS	None	No	Elwha River Corridor
H	PEM	None	No	Elwha River Corridor
I	PSS / PEM	On banks of Elwha River	Yes	Elwha River Corridor
J	PFO	On island in Elwha River	Yes	Elwha River Corridor
ER-1	PFO / PSS	None	No	No
ER-2	PEM	None	No	No
K	PFO	None	No	Elwha River Corridor
L	PSS / PEM	Large open water pond	No	Elwha River Corridor
M	PEM	None	No	Elwha River Corridor
N	PEM	None	No	Elwha River Corridor
EH-1	PSS	None	No	No
EH-2	PEM	None	No	No
EH-3	PEM	None	No	No

Table 4-2 (Continued)
Landscape Functions of Wetlands within Clallam County and City of Port Angeles Jurisdiction

Wetland	Habitat Type	Significant Habitat Features	Anadromous Fish Use	Significant Wildlife Movement Corridor
EH-4	PEM	None	No	No
EH-5	PEM	None	No	No
EH-6	PEM	None	No	No
EH-7	PSS / PEM	None	No	No
EH-8	PSS / PEM	None	No	No
EH-9	PSS / PEM	None	No	No
EH-10	PEM / POW	Contains pond	No	No
EH-11	PSS / POW	None	No	No
ED-1	PEM	None	No	Elwha River Corridor
ED-2	L2EM / PSS	On shores of Lake Aldwell	Yes	Elwha River Corridor
PR-1	PFO	Contains tributary to Elwha River	Yes	Elwha River Corridor
PR-2	PEM	None	No	Elwha River Corridor
PR-3	PEM	None	No	Elwha River Corridor
PR-4	PSS / PEM	None	No	Elwha River Corridor
PR-5	PEM	None	No	Elwha River Corridor
TD-1	PSS / PEM	On banks of Elwha River	Yes	Elwha River Corridor

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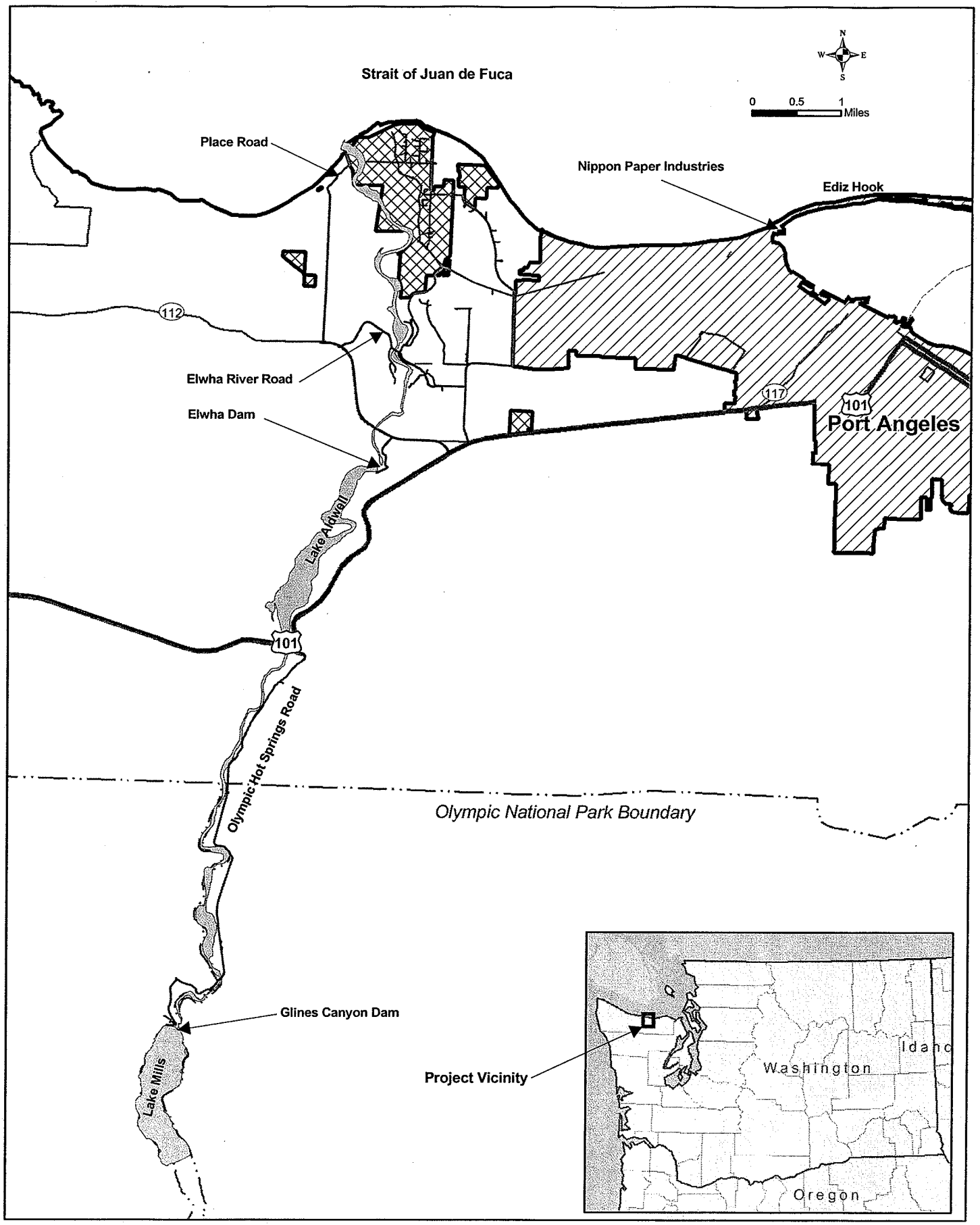

Figure 1: Vicinity Map

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 1 of 20

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Legend

- Roads
- Elwha River
- Lower Elwha Klallam Reservation
- City of Port Angeles

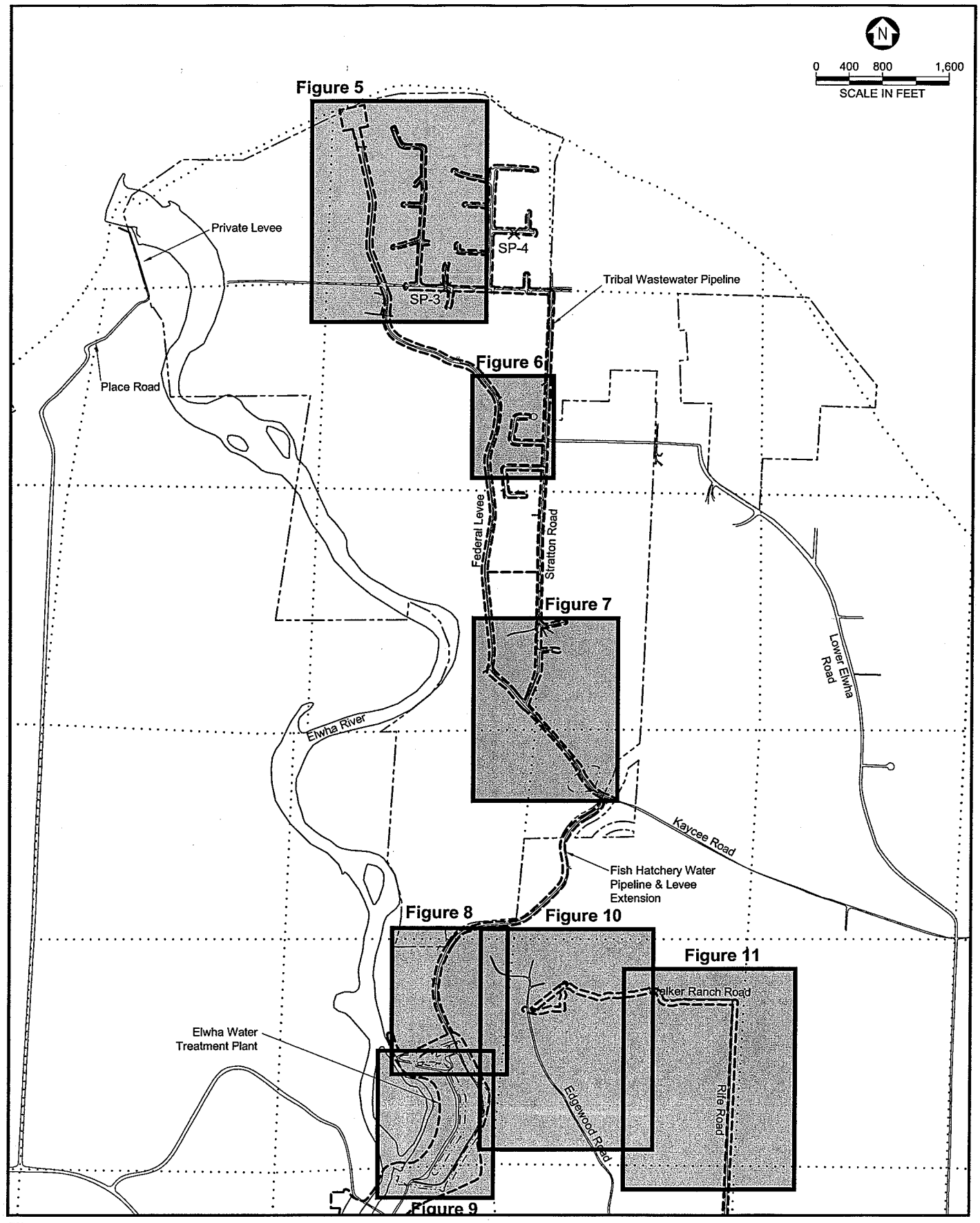

Figure 2
Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 2 of 20

Legend

- Potential Construction Disturbance Footprint
- Lower Elwha Klallam Tribe Reservation Boundary
- Section Line

URS

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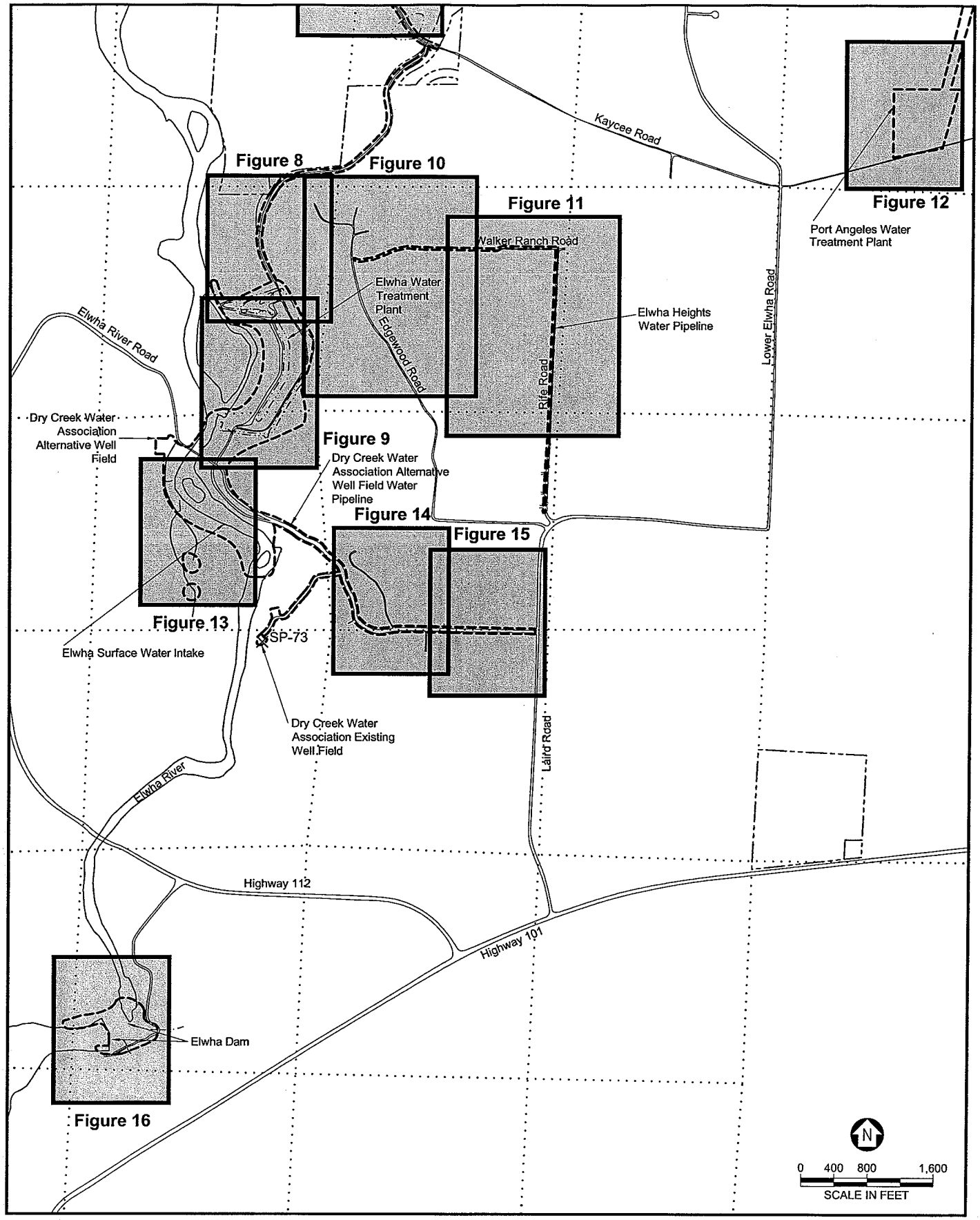

Figure 3

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 3 of 20

Legend

- Potential Construction Disturbance Footprint
- Lower Elwha Klallam Tribe Reservation Boundary
- Section Line

URS

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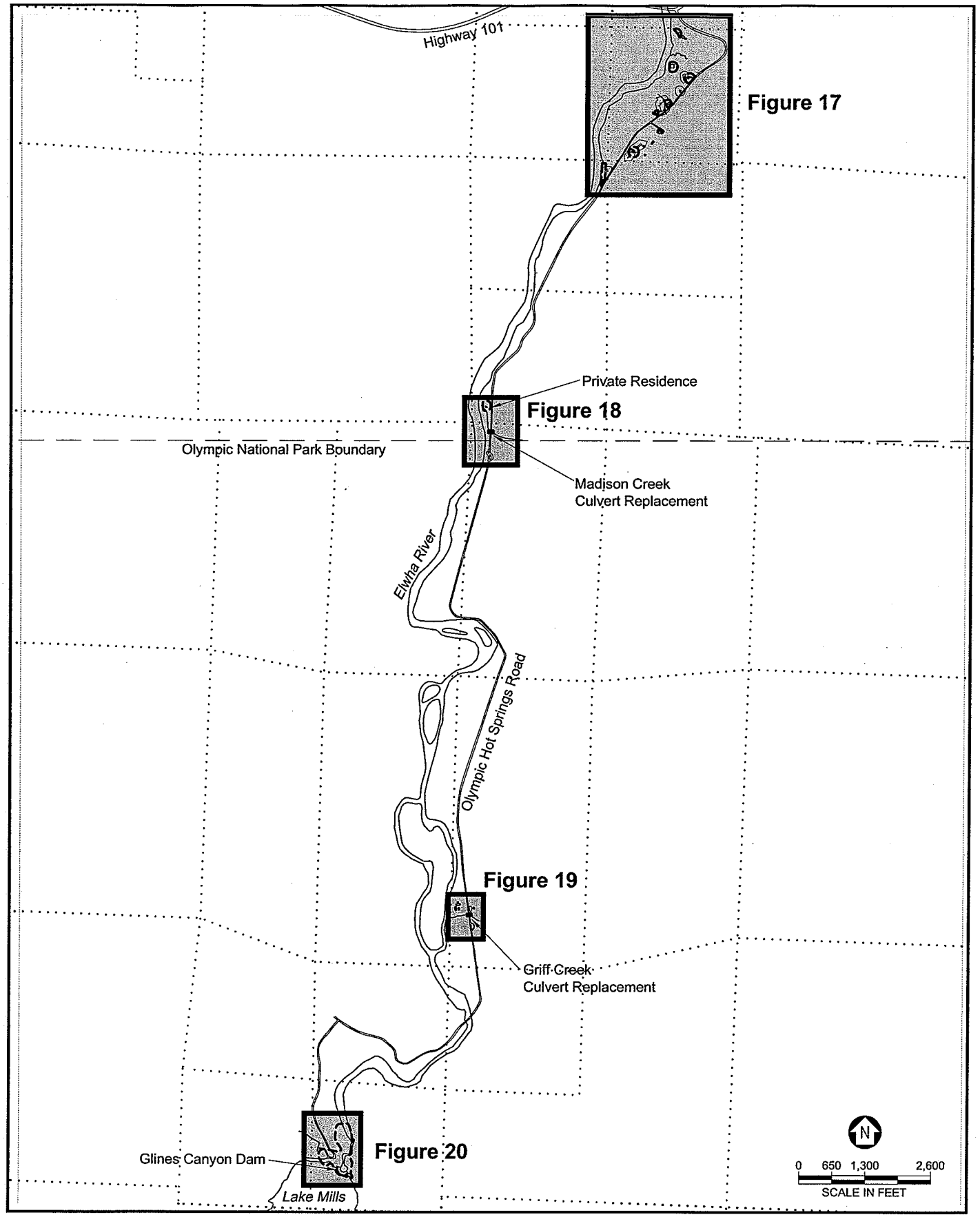

Figure 4
Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 4 of 20

Legend
---- Potential Construction Disturbance Footprint
····· Section Line

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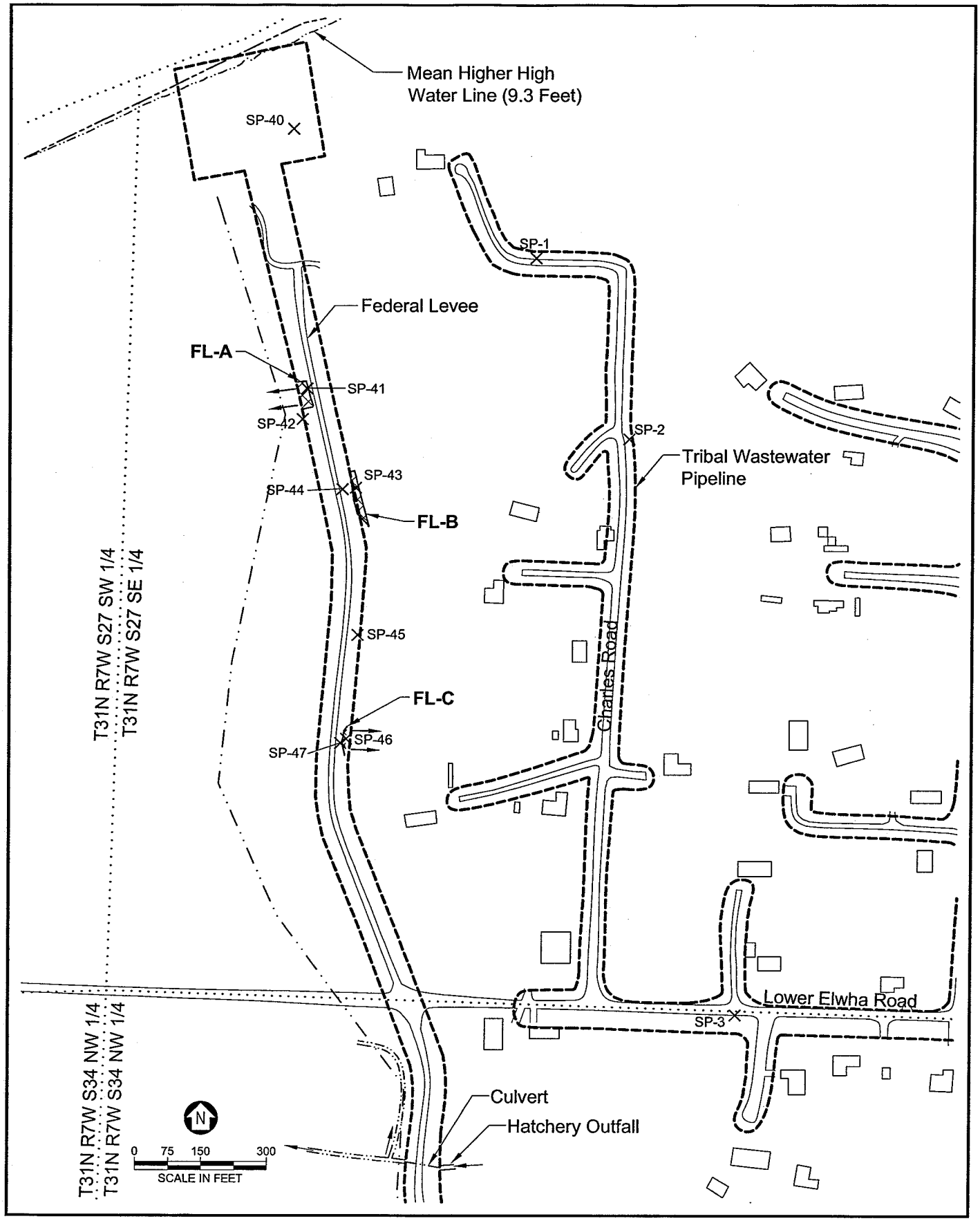

Figure 5

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 5 of 20

Legend

- Wetland
- Sample Plot
- Potential Construction Disturbance Footprint
- Lower Elwha Klallam Tribe Reservation Boundary
- Wetland Extends Beyond Surveyed Area
- Section Line
- Elwha River Ordinary High Water Mark

URS

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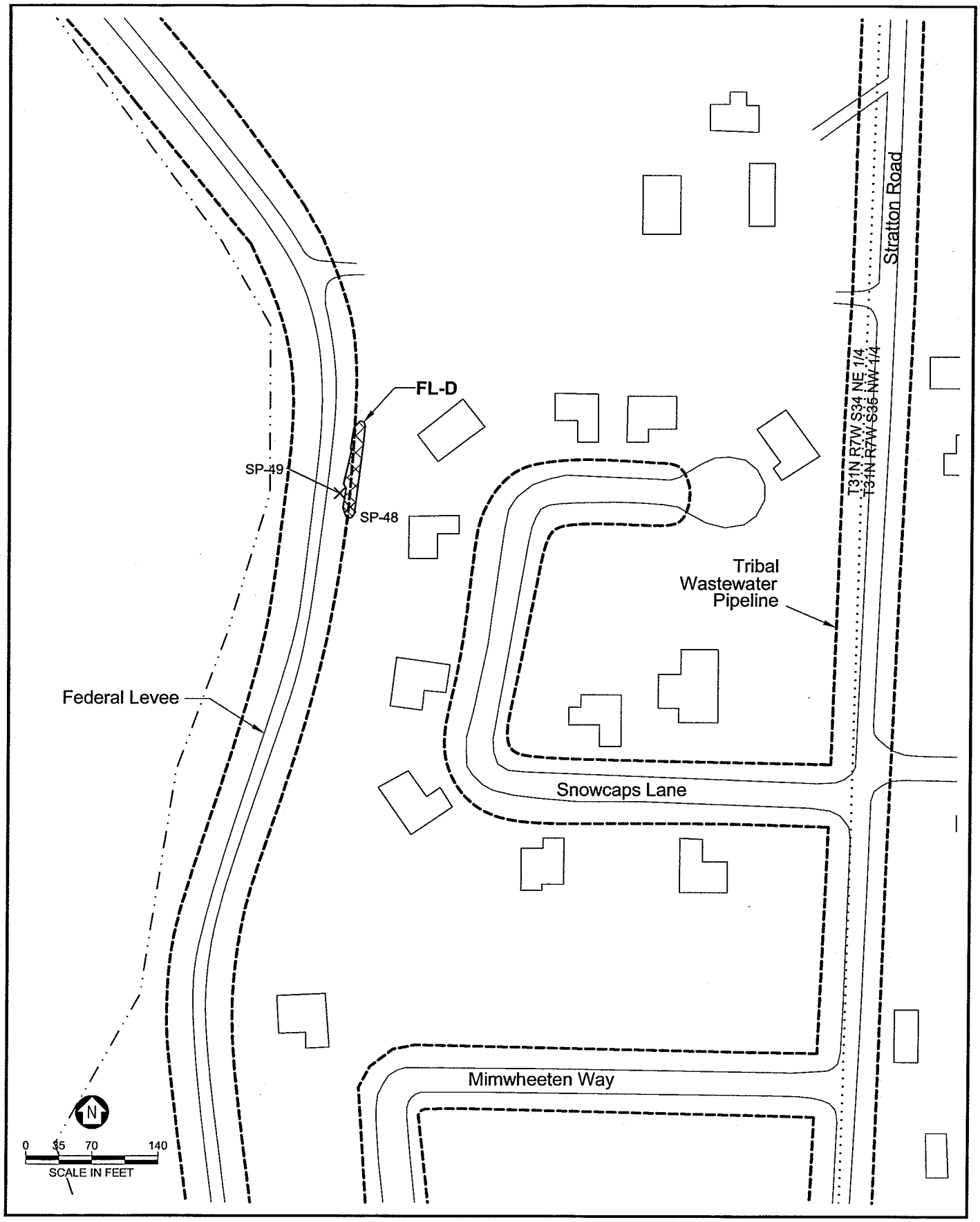

Figure 6

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 6 of 20

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Note: This Area is Within LEKT Reservation

Legend

- Wetland
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Mark

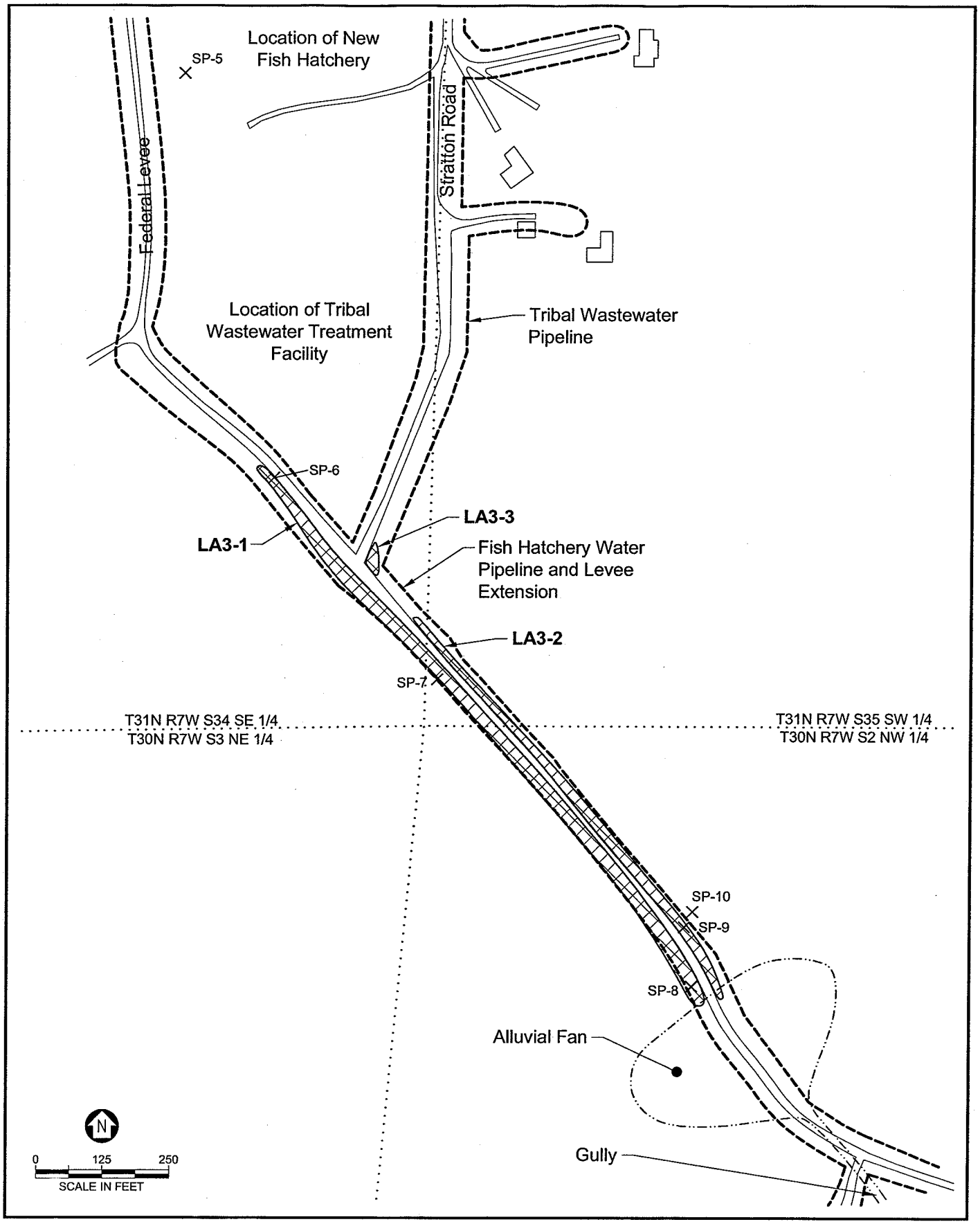

Figure 7

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 7 of 20

URS

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Legend

- Wetland
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line

Note: This Area is Within LEKT Reservation.

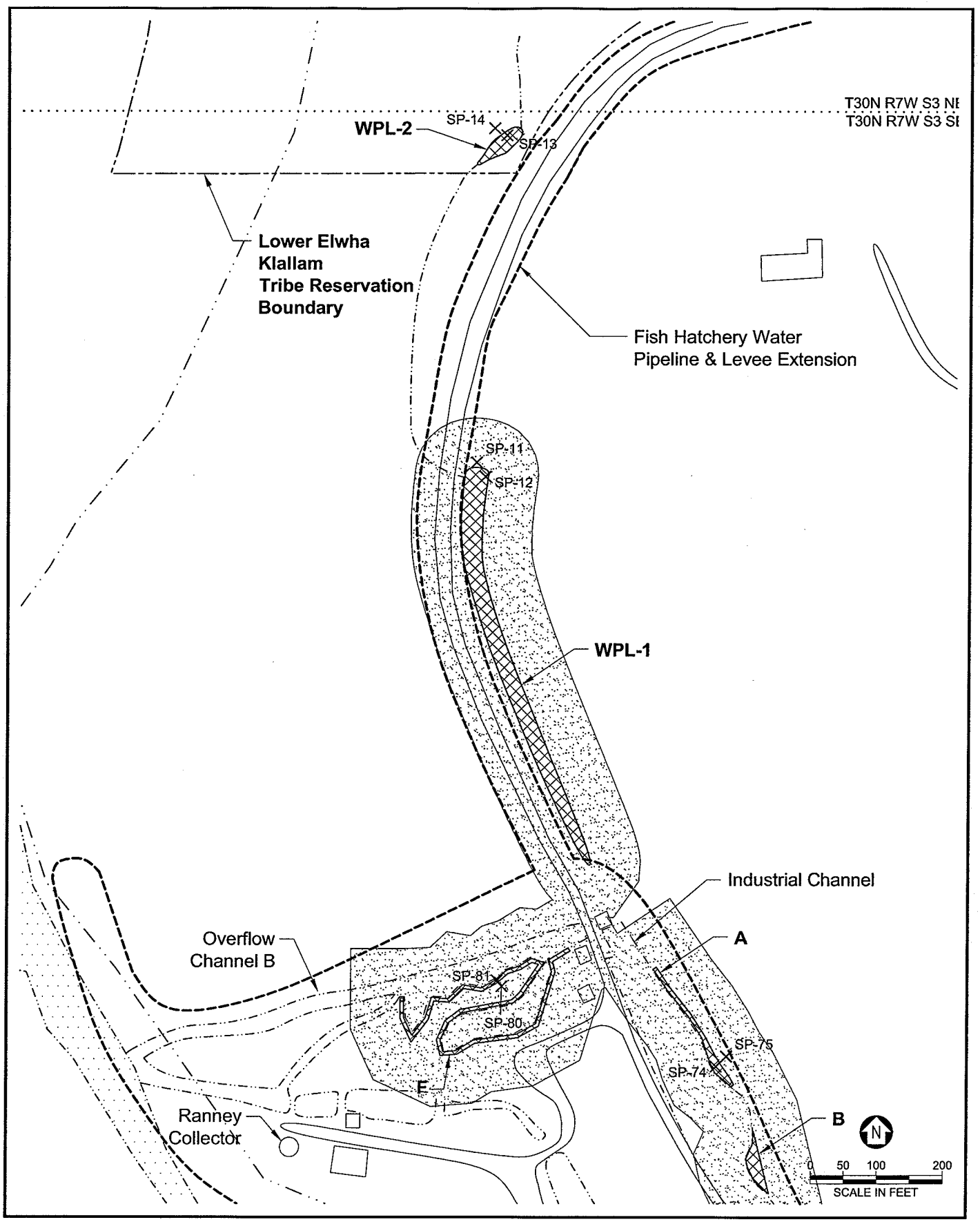

Figure 8

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 8 of 17

Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Line

URS

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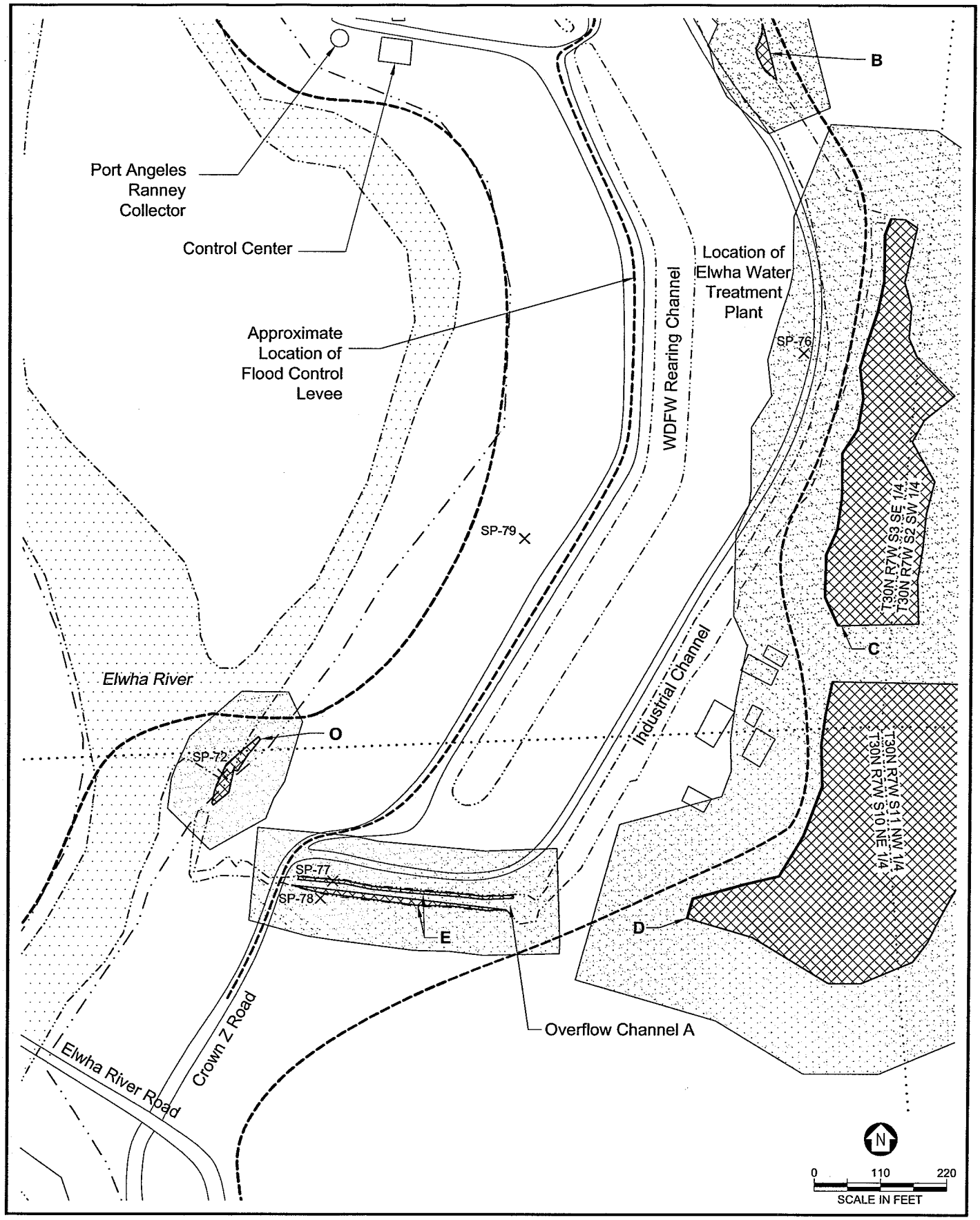

Figure 9

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 9 of 20

URS

FILENAME: T:\Misc-Jobs\Elwha\ElwhaTribe\Maps\RP\Figure 9.dwg
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Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Mark

Note: This Area is Outside LEKT Reservation

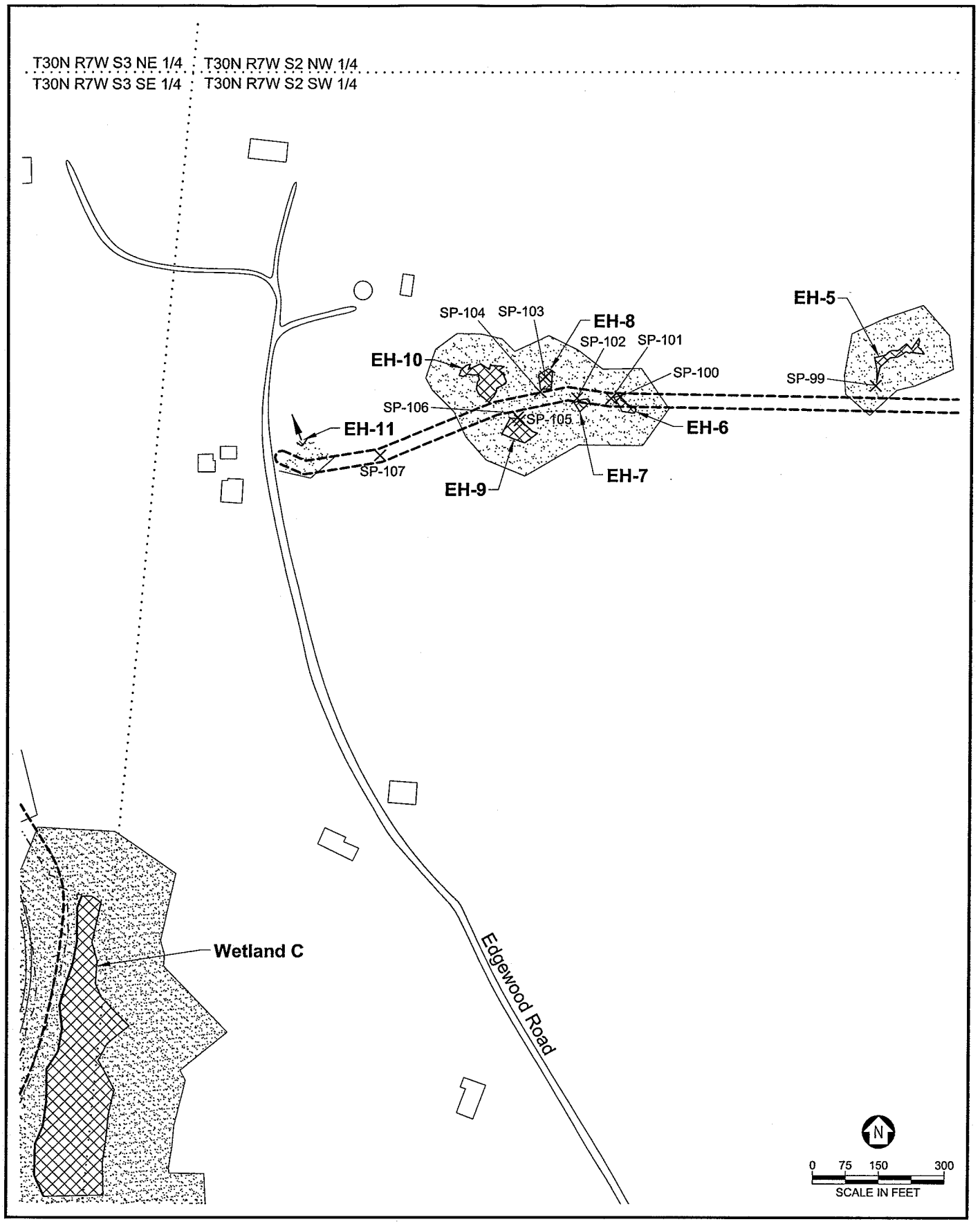

Figure 10

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 11 of 20

Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Wetland Extends Beyond Surveyed Area

URS

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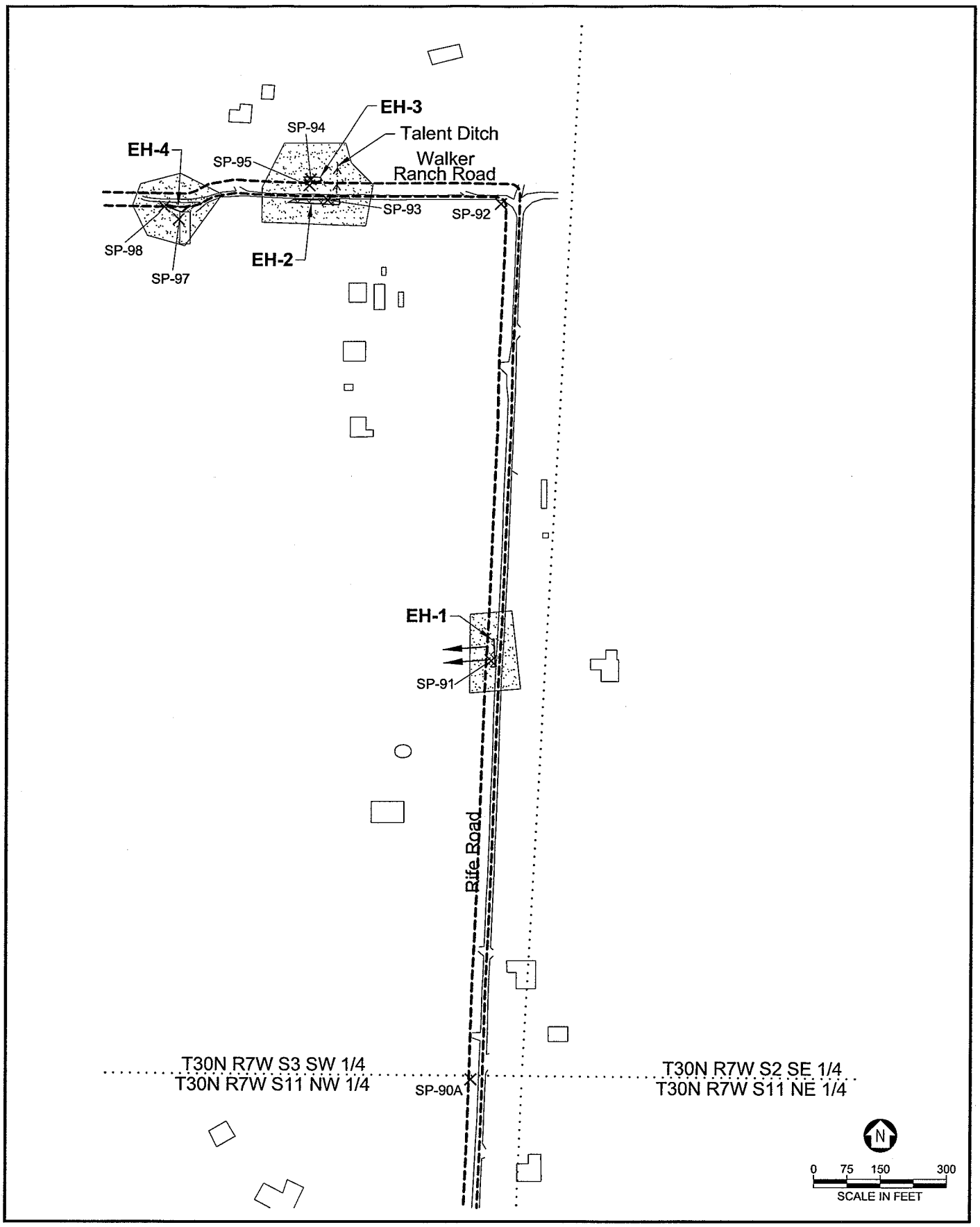

Figure 11

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 11 of 20

Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Wetland Extends Beyond Surveyed Area

URS

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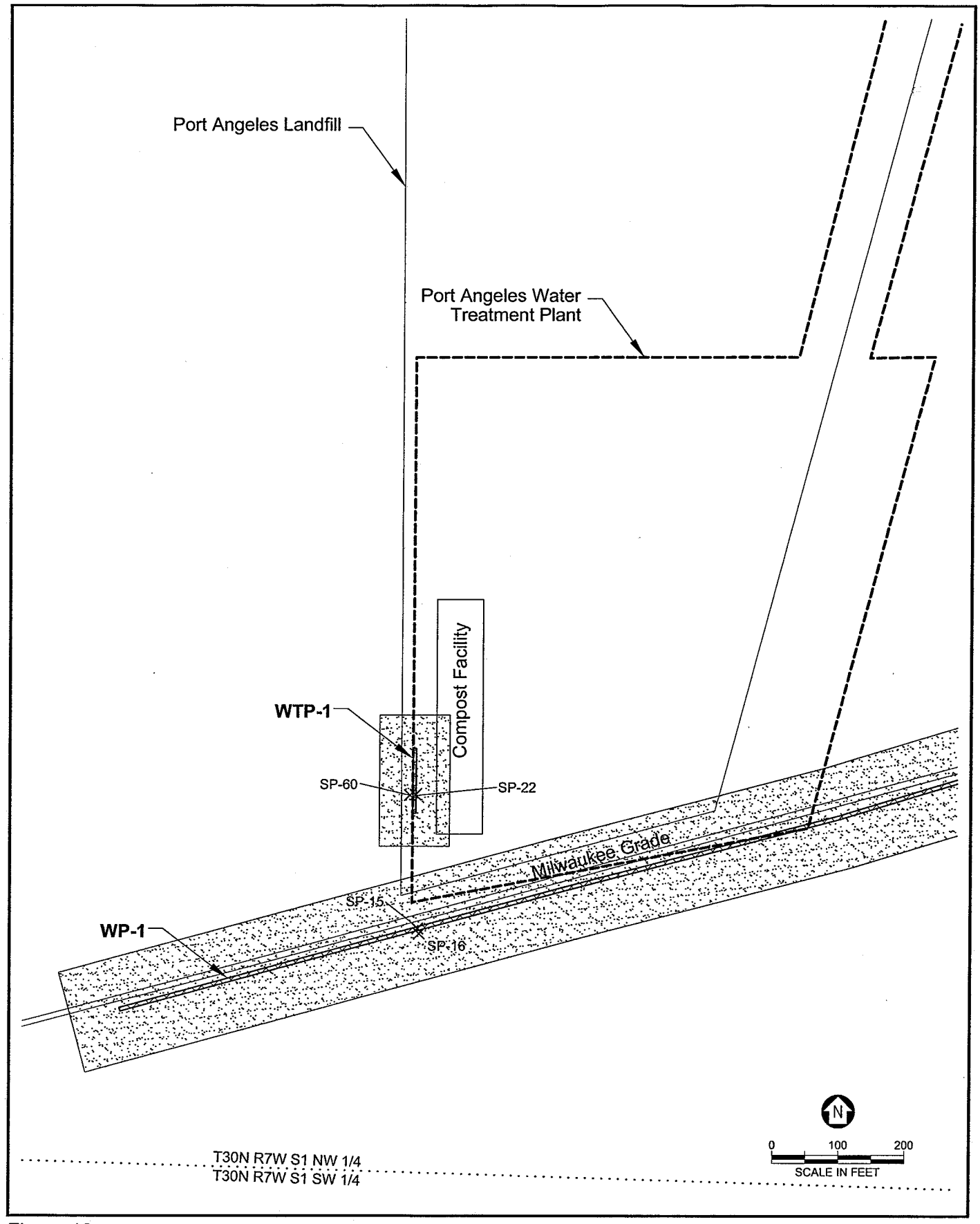

Figure 12

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 12 of 20

Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line

URS

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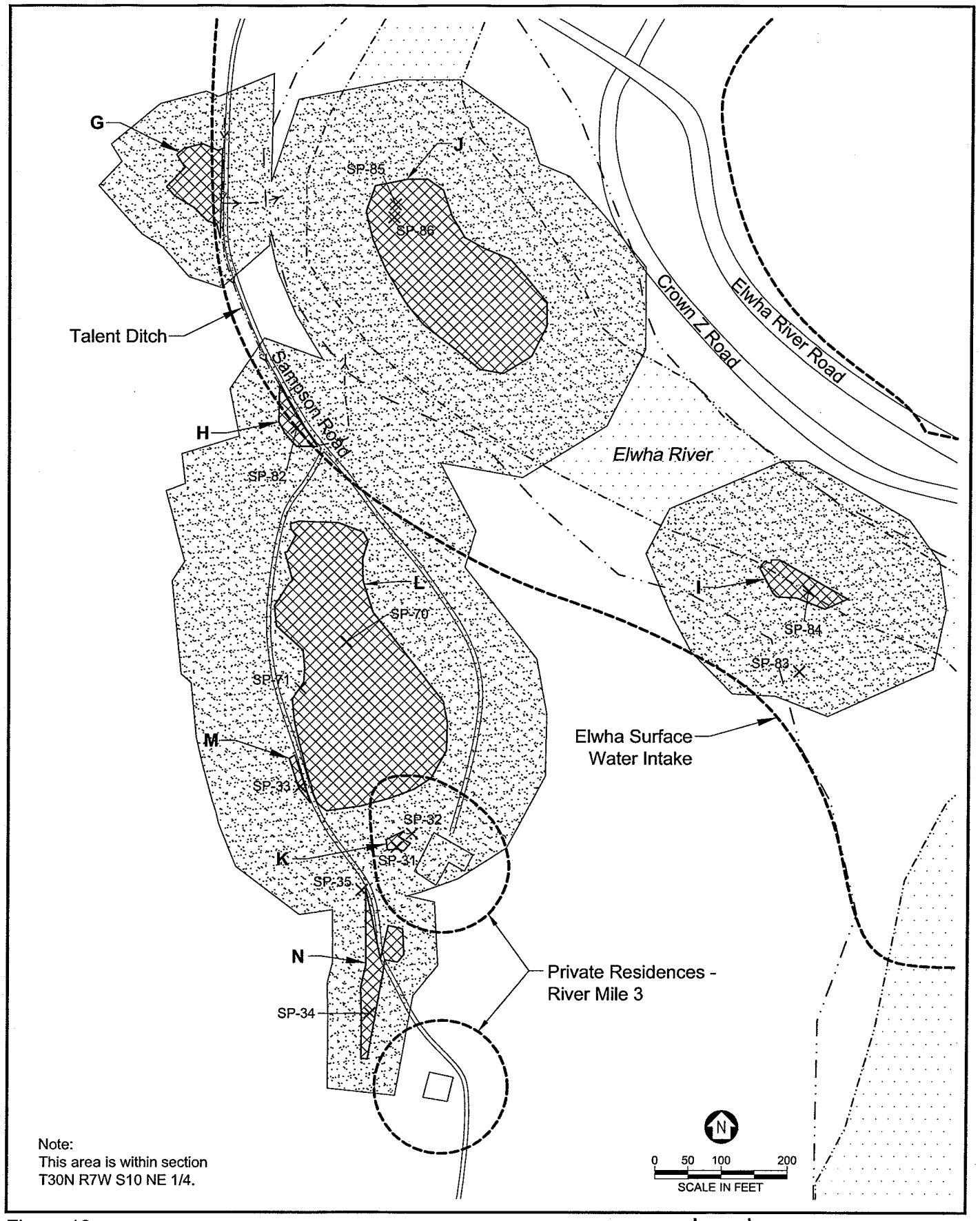

Figure 13

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 13 of 20

Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Elwha River Ordinary High Water Mark

URS

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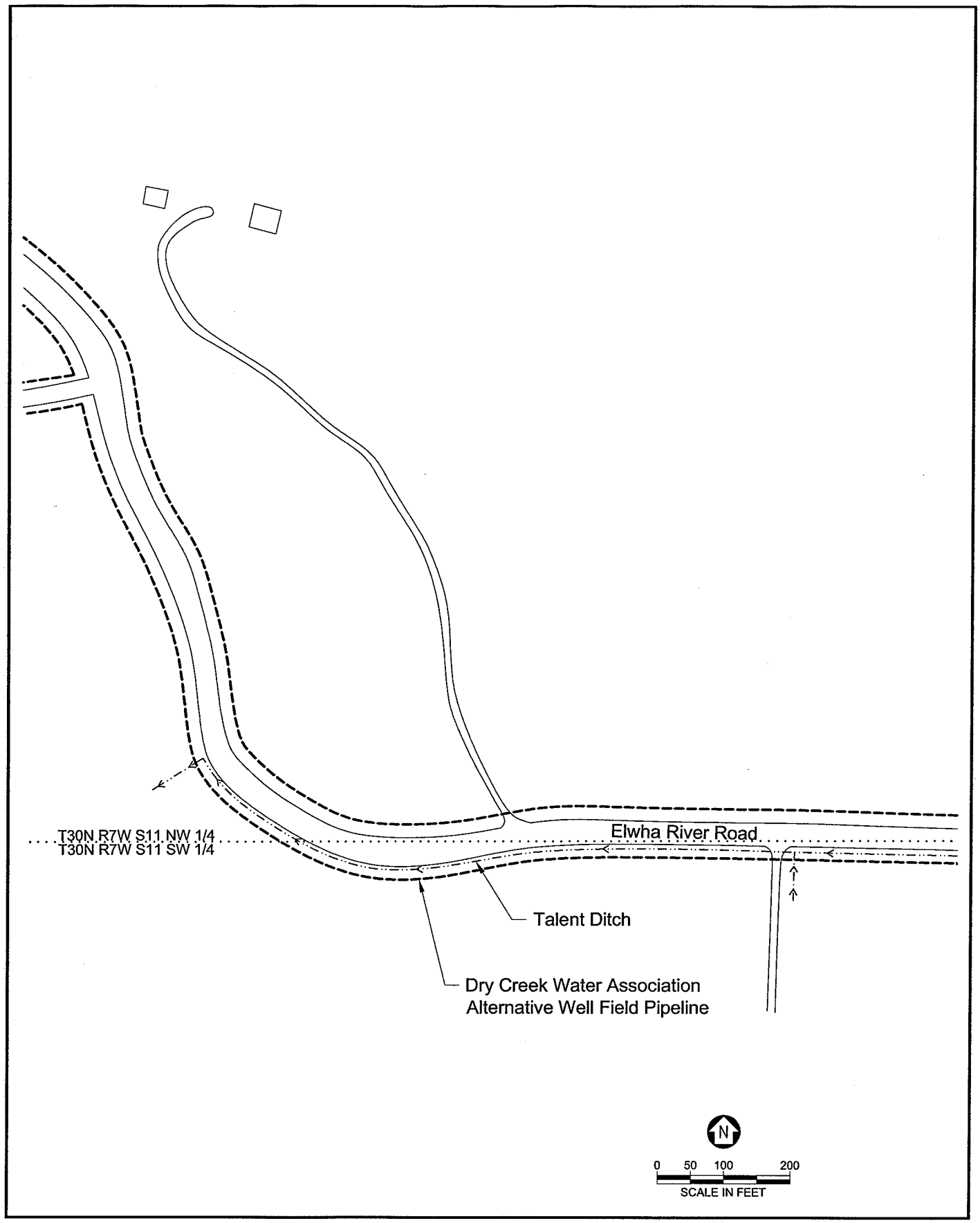

Figure 14

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 14 of 20

Legend

X Sample Plot
---- Potential Construction Disturbance Footprint
..... Section Line

URS

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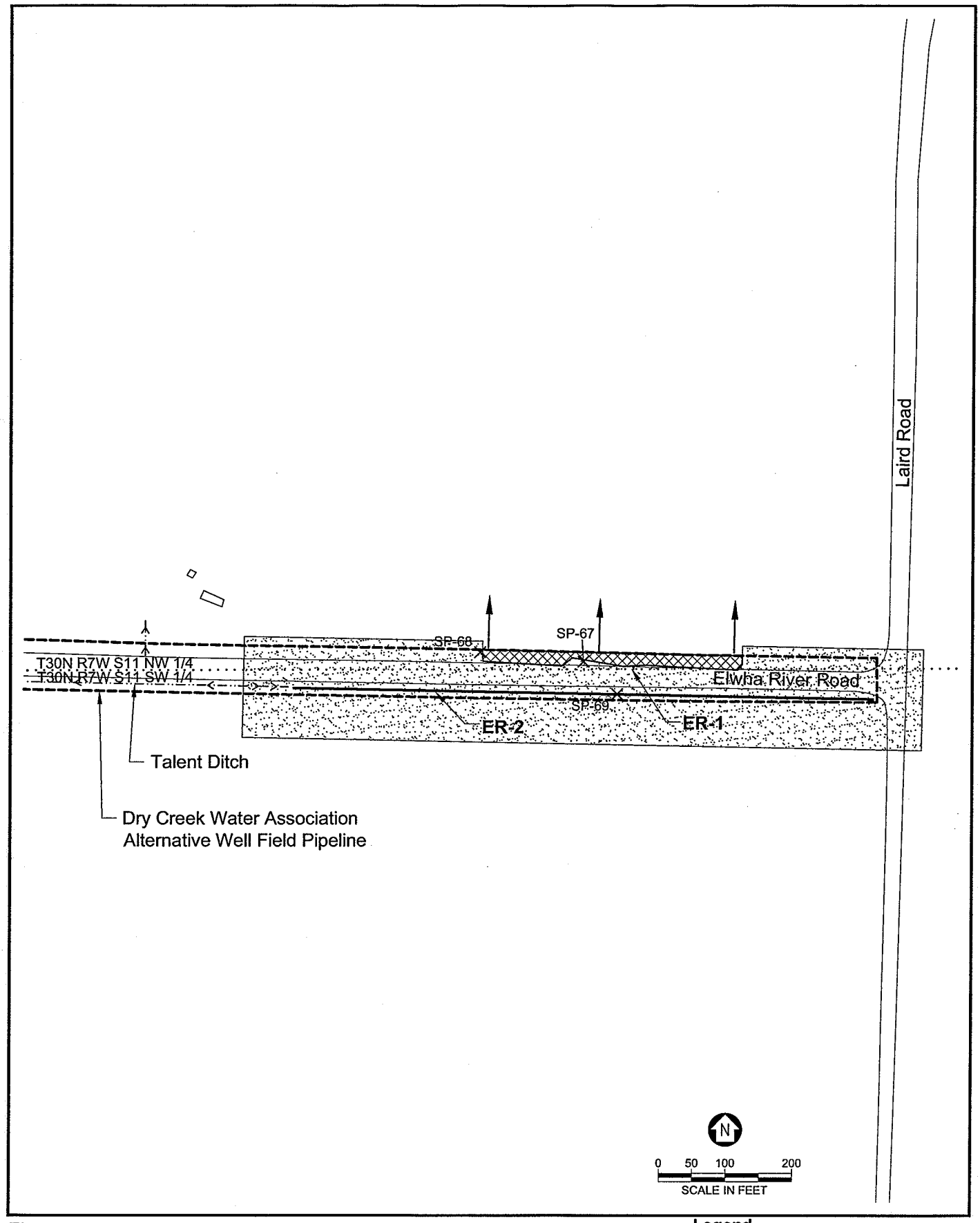

Figure 15

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 15 of 20

URS

FILENAME: T:\Misc-Jobs\Elwha\ElwhaTribe\Maps\RP\Figure 15.dwg
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Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Wetland Extends Beyond Surveyed Area

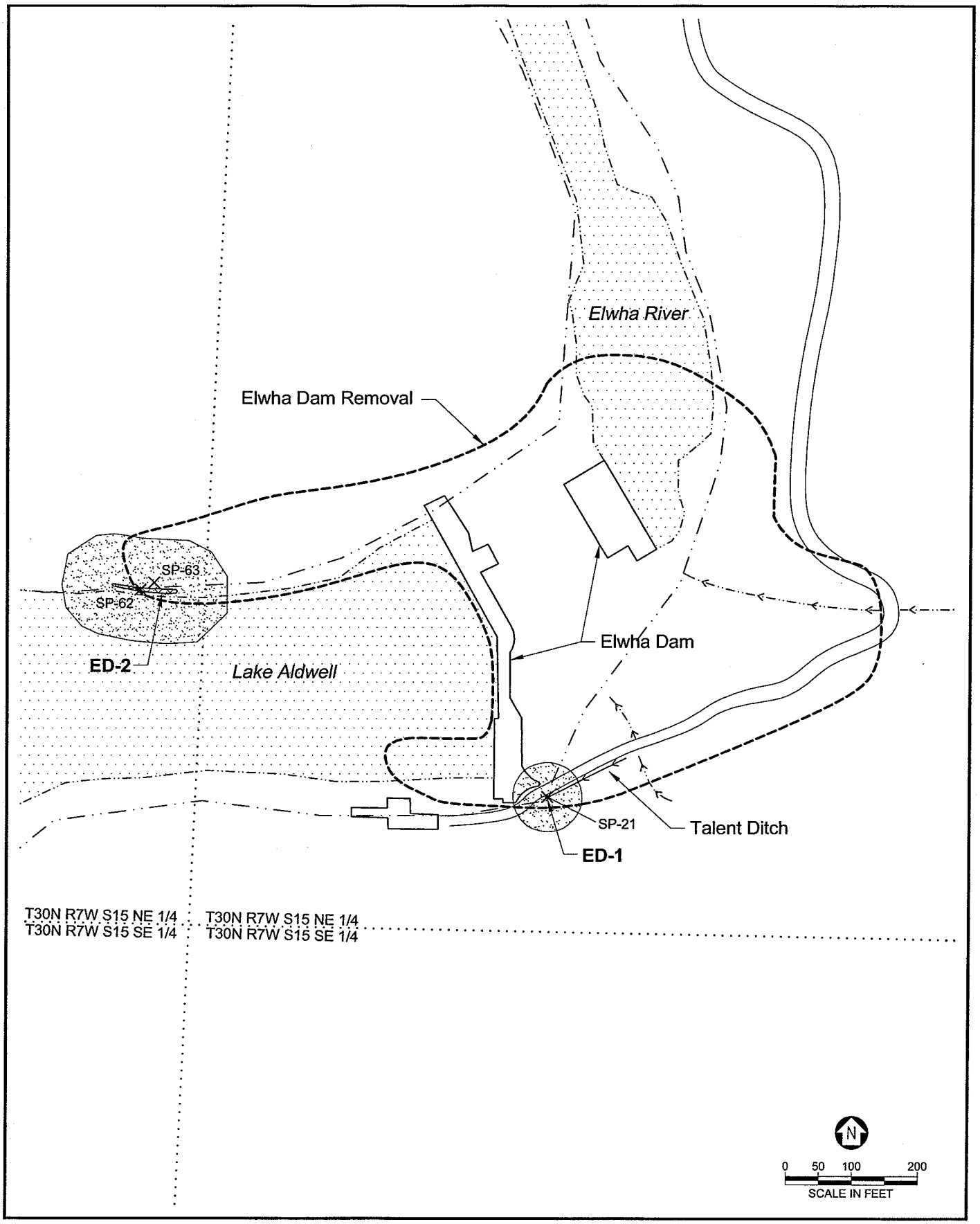

Figure 16

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 16 of 20

Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Mark

URS

FILENAME: T:\Misc-Jobs\Elwha\ElwhaTribe\Maps\RP\Figure 16.dwg
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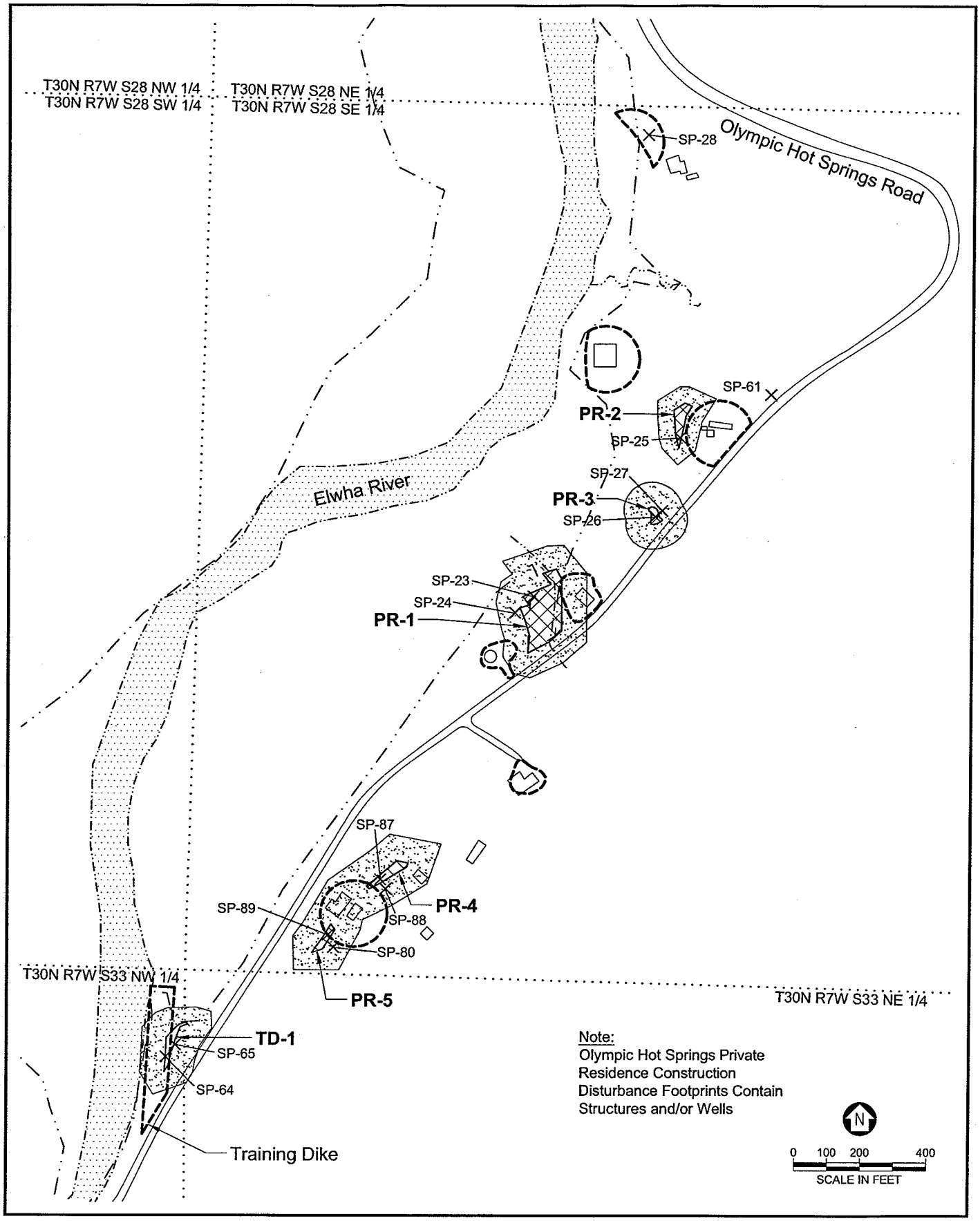

Figure 17

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 17 of 20

Legend

- Wetland
- Wetland Buffer
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Mark

URS

FILENAME: T:\Misc-Jobs\Elwha\ElwhaTribe\Maps\RP\Figure 17.dwg
EDIT DATE: 03/03/06 AT: 14:23

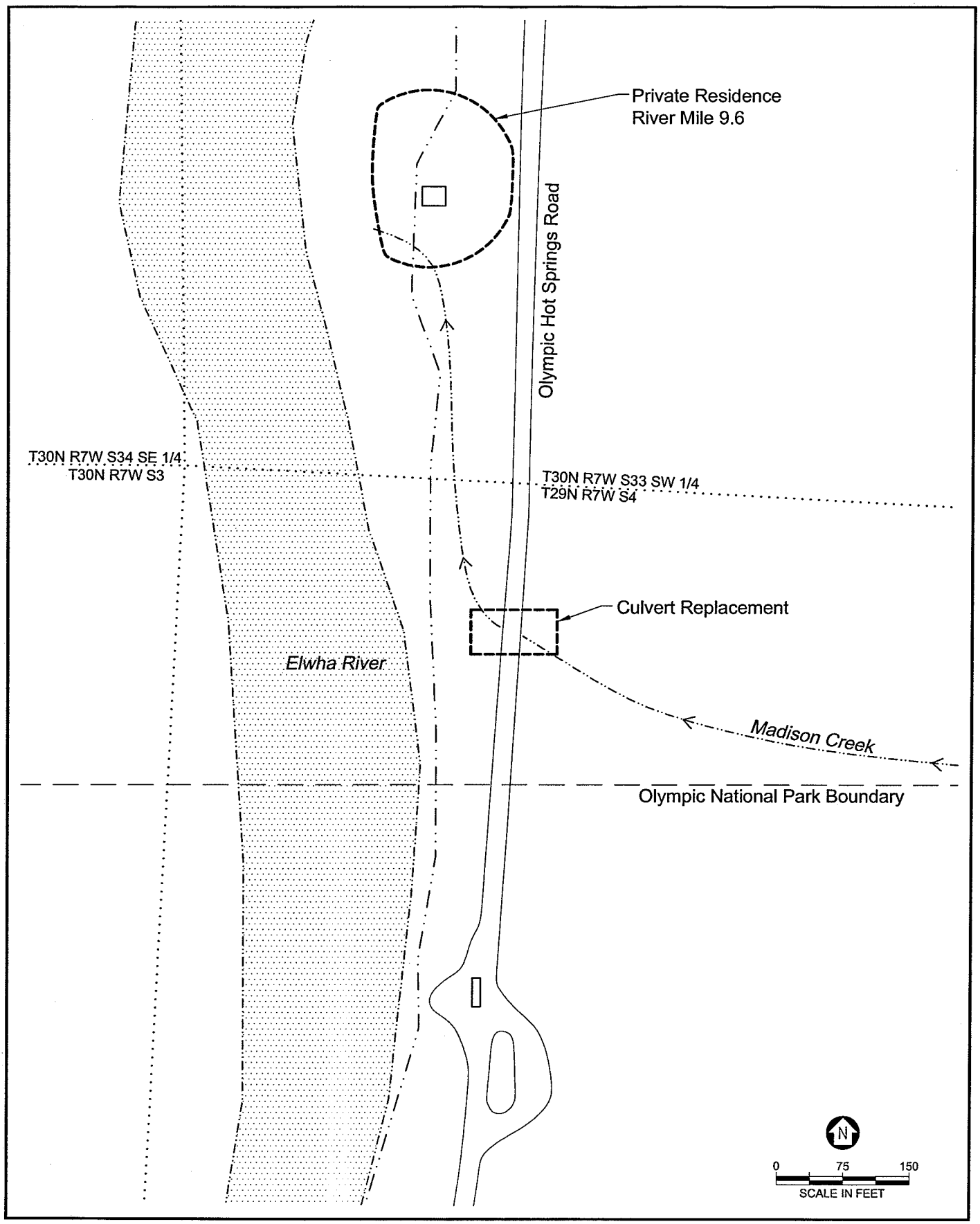

Figure 18

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 18 of 20

Legend

- Wetland
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Mark

URS

FILENAME: T:\Misc-Jobs\Elwha\ElwhaTribe\Maps\RP\Figure 18.dwg
EDIT DATE: 03/03/06 AT: 14:51

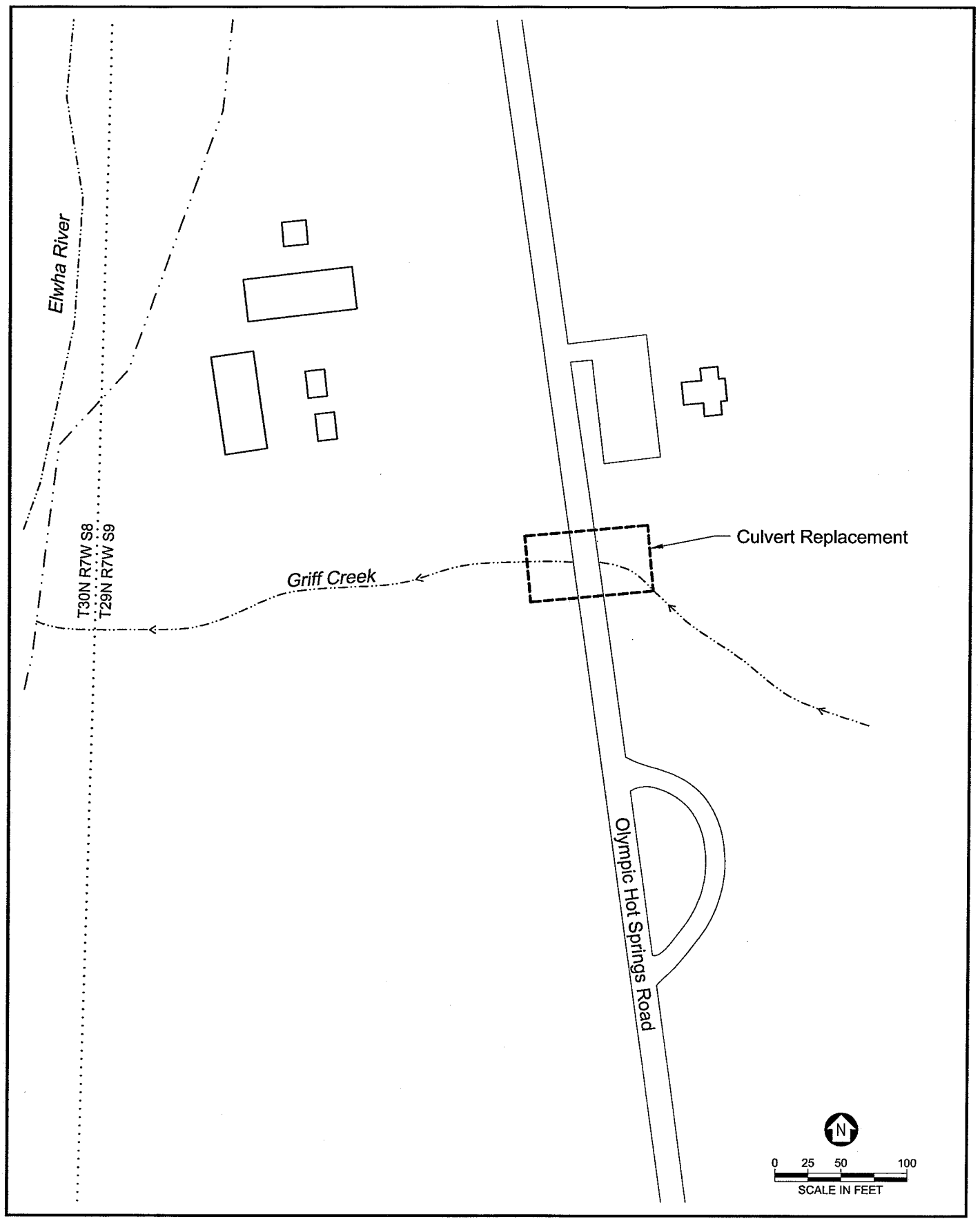

Figure 19

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 19 of 20

Legend

- Wetland
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Mark

URS

FILENAME: T:\Misc-Jobs\Elwha\ElwhaTribe\Maps\RP\Figure 19.dwg
EDIT DATE: 03/03/06 AT: 14:52

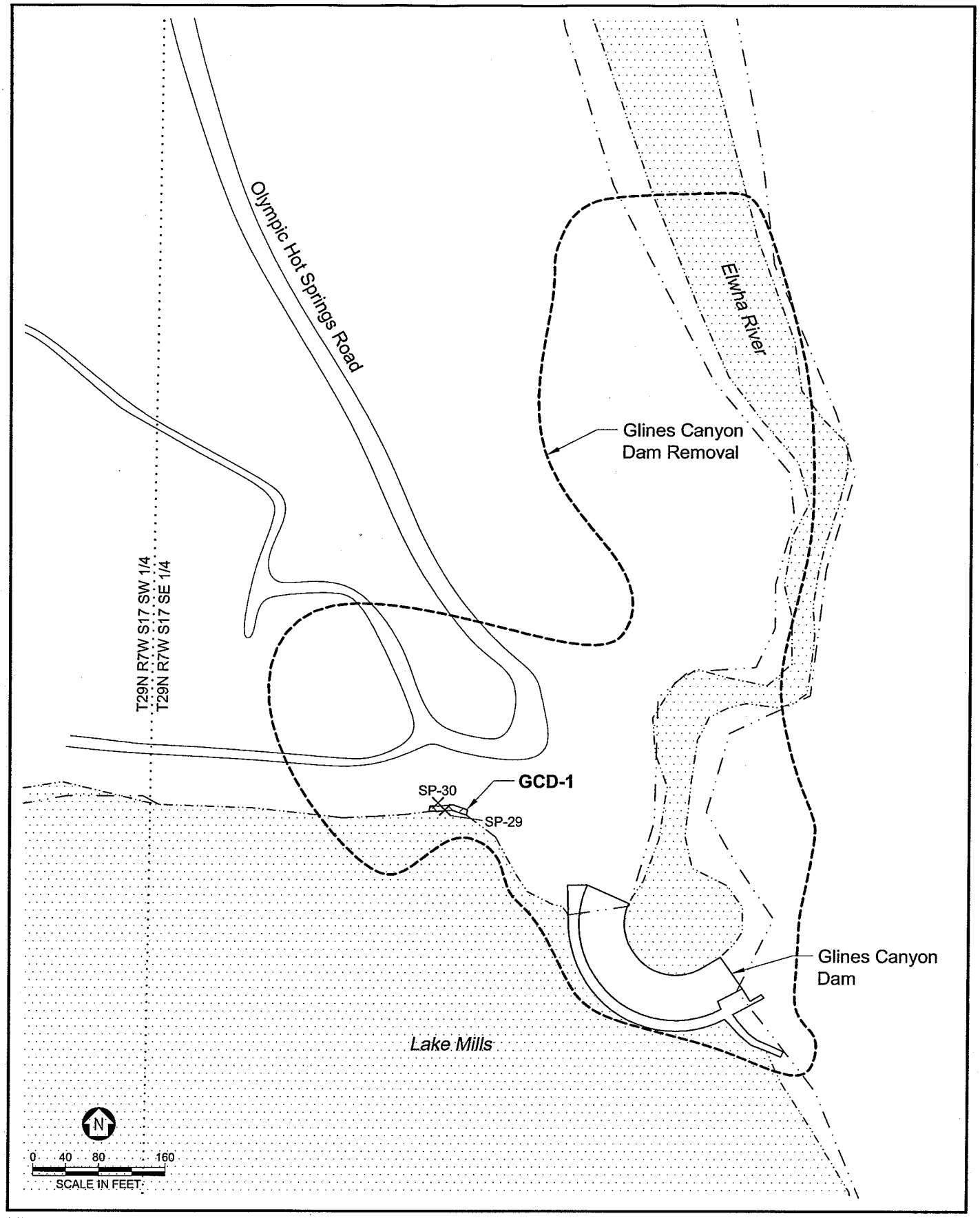

Figure 20

Proposed Project: Construction Projects Associated with Elwha River Restoration
Purpose: Restore Elwha River Ecosystem and Native Anadromous Fisheries
Location: Clallam County, Washington
Applicant: Bureau of Reclamation
Sheet: 20 of 20

Legend

- Wetland
- Sample Plot
- Potential Construction Disturbance Footprint
- Section Line
- Elwha River Ordinary High Water Mark

URS

FILENAME: T:\Misc-Jobs\Elwha\ElwhaTribe\Maps\RP\Figure 20.dwg
EDIT DATE: 03/06/06 AT: 09:58

APPENDIX A

WETLAND DELINEATION DATA FORMS

(Modified to fit one page from Routine Wetland Determination Data Form found in Appendix B of the 1987 Corps Wetlands Delineation Manual)

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 25, 2005
Site Location: Wastewater Pipeline
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-1 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Festuca arundinacea	FAC-	70 ✓
					Elytrigia repens (= Agropyron r.)	FAC-	30 ✓
					Cirsium arvense	FAC-	5
					Vicia sativa	—	2
*Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 0 %
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is not dominated by hydrophytic species

Soil

Mapped Series: Puget silt loam
Taxonomy: Fluvaquentic Endoaquepts
Drainage Class: poorly drained
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	1-12	10YR 3/1	5YR 4/6 few, fine	silty clay loam
A_2	12-16	10YR 3/1	5YR 4/6	loamy sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: Low chroma matrix soil color w/ redoximorphic features is an indicator of hydric soil

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☒ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-1 is in a mowed pasture in topographically low swale. It's near the beach and gets flooded during storms, but water doesn't stay long.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 25, 2005
Site Location: Wastewater Pipeline
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-2 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Malus fusca	FACW	5	Herbs	Dactylis glomerata	FACU	30 ✓
					Agrostis stolonifera	FAC	20 ✓
					Elytrigia repens (=Agropyron r.)	FAC-	10
					Equisetum telmateia	FACW	5
					Cirsium arvense	FAC-	5
* Shrubs	Rubus armeniacus (=R. discolor)	FACU	5		Poa pratensis	FAC	10
					Holcus lanatus	FAC	20 ✓

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 %
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Puget Silt loam
Taxonomy: Fluvaquentic Endoaquepts
Drainage Class: poorly drained
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-12	10YR 3/2	—	silty clay loam
A_2	12-16	10YR 3/2	—	sandy loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: No wetland hydrology indicators are present

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-2 is located east of Charles Road

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Wastewater Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-3 Site Location:
Fieldwork Date: July 25, 2005
County: Clallam State: WA
Investigator(s): J. Walker, L. Miller

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Festuca arundinacea	FAC-	50 ✓
					Holcus lanatus	FAC	20 ✓
					Hypochaeris radicata	FACU	2
					Agrostis capillaris	FAC	5
					Plantago lanceolata	FAC	2
* Shrubs	Rubus armeniacus (=R. discolor)	FACU	T		Dactylis glomerata	FACU	30 ✓
					Convolvulus sepium	—	2

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 33%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is not dominated by hydrophytic species

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoaquepts Drainage Class: poorly drained
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR 3/2	—	cobbly, gravelly sandy loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments: much debris (glass) in profile

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: no wetland hydrology indicators are present

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-3 is located south of Lower Elwha Road in a ditch. The ditch does not have culverts, + does not appear to drain to any stream or wetland.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 25, 2005
Site Location: Wastewater Pipeline
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-4 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Equisetum telmateia	FACW	80 ✓
					Dactylis glomerata	FACU	10
					Cirsium arvense	FAC-	15
					Agrostis sp. (capillaris/stolonifera)	FAC	20 ✓
					Festuca arundinacea	FAC-	10
* Shrubs	Alnus rubra	FAC	5		Galium aparine	FACU	T
					Vicia hirsuta	—	T

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Puget Silt loam
Taxonomy: Fluvaquentic Endoaquepts
Drainage Class: poorly drained
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR 4/2	—	silty clay loam, mixed w/fill

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-4 is south of Seawind Drive in a roadside ditch. Ditch is isolated w/ ~~not~~ no culverts

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 25, 2005
Site Location: New Hatchery / WWTF
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-5 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Elytrigia repens (=Agropyron r.)	FAC-	50 ✓
					Bromus sp.	—	20 ✓
					Dactylis glomerata	FACU	5
					Cirsium arvense	FAC-	20 ✓
					Poa pratensis	FAC	5
*Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 0%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Puget silt loam
Taxonomy: Fluvaquentic ~~Endo~~aquepts
Drainage Class: poorly drained
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR 4/3	2 matrix colors —	unevenly distributed gravel layer
		10YR 5/3	—	silty clay loam
				some cobbles present

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments: matrix colors matched

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-5 is located in an old pasture dominated by Canada thistle and tall fescue

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 26, 2005
Site Location: Levee Alternative 3
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-6 Site Location: Wetland LA3-1

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	20 ✓
					Agrostis stolonifera	FAC	50 ✓
					Epilobium ciliatum	FACW-	2
					Holcus lanatus	FAC	10
					Festuca arundinacea	FAC-	5
* Shrubs					Urtica dioica	FAC+	2
					Cynosurus cristatus	–	T

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: woody species (Alnus rubra, Rubus spectabilis, Rubus armeniacus) adjacent to wetland

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-6	2.5Y 4/1	—	gravelly fill, loam
A_2	6+	10YR 4/1	10YR 5/6 medium	loamy clay w/ gravel

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: rock refusal at 7"

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: >6" Depth to Free Water: >6"

Primary Hydrology Indicators:
- [ ] Inundated
- [ ] Saturated within 12" bgs
- [X] Wetland drainage pattern → evidence of H_2O ponding
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [X] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: Soil still moist in July

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM / Depressional

Comments: SP-6 is in an emergent wetland dominated by non-native grasses + herbs

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Levee Alternative 3
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-7 Site Location:
Fieldwork Date: July 26, 2005
County: Clallam State: WA
Investigator(s): J. Walker, L. Miller

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	100 ✓	Herbs	Ranunculus repens	FACW	30 ✓
					Urtica dioica	FAC+	5
					Poa pratensis/palustris	FAC	15
					Polystichum munitum	FACU	T
					moss		60 ✓
* Shrubs	Sambucus racemosa	FACU	15				
	Rubus spectabilis	FAC+	10				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	2.5Y 3/2	5YR 3/1 and 7.5YR 4/4 common, medium, distinct	silty clay loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: redoximorphic features have defined edges, appear to be relict, lots of wood in profile

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 26, 2005
Site Location: Levee Alternative 3
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-8 Site Location: Wetland LA3-1

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	40 ✓
					Urtica dioica	FAC+	5
					Tolmiea menziesii	FAC	50 ✓
					Poa palustris/pratensis	FAC	2
					Athyrium filix-femina	FAC	2
* Shrubs					Geum macrophyllum	FACW-	2

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐
* = also includes saplings (woody plants <20 ft tall)

Comments: shrubs + trees are rooted outside of wetland: Oemleria cerasiformis, Rubus spectabilis, Alnus rubra

Soil

Mapped Series: 73 Typic XeroFluvents Taxonomy: Typic XeroFluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-1	10YR 3/2	—	silty clay loam
A_2	1-5	2.5Y 4/1	10YR 4/6 common, faint	loamy clay

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: rock refusal @ 5"

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: 75" Depth to Free Water: 75"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☒ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: soil still moist in July

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM / Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 26, 2005
Site Location: Levee Alternative 3
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-9 Site Location: Wetland LA3-2

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	30 ✓
					Geum macrophyllum	FACW-	5
					Urtica dioica	FAC+	5
					Tolmiea menziesii	FAC	5
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐
* = also includes saplings (woody plants <20 ft tall)

Comments: Very heavily disturbed by vehicle traffic, much of vegetation removed by activity

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	2.5 Y 4/1 2.5 Y 4/2	7.5 YR 4/3	Silty clay + sandy clay loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: fill soil, wood in profile, profile is jumbled, no distinct horizonation

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:		Secondary Hydrology Indicators:	
☐ Inundated	☐ Drift lines	☐ Oxidized Root Channels within 12" bgs	☐ FAC- neutral test
☐ Saturated within 12" bgs	☐ Sediment deposits	☐ Local soil survey	☐ Water-stained leaves
☒ Wetland drainage pattern	☐ Water marks	☐ Other:	

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Soil still moist in July, low spot next to road

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM, Depressional

Comments: SP-9 is in Wetland LA3-2, adjacent to road

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 26, 2005
Site Location: Levee Alternative 3
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-10 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	100	✓ Herbs	Tolmiea menziesii	FAC	30 ✓
					Hydrophyllum tenuipes	–	15
					Urtica dioica	FAC+	10
* Shrubs	Oemleria cerasiformis	FACU	70 ✓				
	Rubus spectabilis	FAC+	10				
	Sambucus racemosa	FACU	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 66%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-15	10YR 3/2	—	Sandy clay loam
B	15-16	2.5Y 4/3	2.5Y 5/4 faint, fine	silty clay

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-10 is in a forested upland adjacent to wetland LA3-2.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 27, 2005
Site Location: Water Pipeline + Levee
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-11 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Acer macrophyllum	FACU	60 ✓	Herbs	Polystichum munitum	FACU	10
	Pseudotsuga menziesii	FACU	40 ✓		Smilacina racemosa	FAC-	5
	Alnus rubra	FAC	5		Elymus glaucus	FACU	T
					Equisetum arvense	FAC	T
*Shrubs	Rubus ursinus	FACU	20 ✓				
	Rubus parviflorus	FAC-	20 ✓				
	Symphoricarpos albus	FACU	10				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 0 %
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Typic Xerofluvents
Taxonomy: Typic Xerofluvents
Drainage Class:
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-14	10YR3/2	—	loamy sand w/ gravel + cobbles

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: 14" Depth to Free Water: 14"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 27, 2005
Site Location: Water Pipeline and Levee
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-12 Site Location: Wetland WPL-1

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Scirpus microcarpus	OBL	30 ✓
					Spirodela polyrhiza	OBL	20 ✓
					Carex stipata	OBL*	5
					Oenanthe sarmentosa	OBL	T
					Myosotis laxa	OBL	T
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: _____ ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☐ * = also includes saplings (woody plants <20 ft tall)
Comments: * no status for Carex stipata on 1988/1993 List, used 1996 ~~Draft list for~~ Draft list for status

Soil

Mapped Series: Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class:
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-5	10YR 5/1	—	loamy clay

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐
Comments: rock refusal @ 5"

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: 12" Depth to Saturation: 0" Depth to Free Water: 0"

Primary Hydrology Indicators:
☒ Inundated
☒ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐
Comments:

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM/Depressional

Comments: SP-12 is in Wetland WPL-1, which originates from a spring and flows adjacent to a road. This wetland contains patches of open water

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 27, 2005
Site Location: Water Pipeline and Levee
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-13 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Thuja plicata	FAC	40 ✓	Herbs	Polystichum munitum	FACU	5
					Lactuca muralis	—	20 ✓
					Tellima grandiflora	—	10
					Elymus glaucus	FACU	20 ✓
					Leucanthemum vulgare (= Chrysanthemum l.)	—	5
*Shrubs	Oemleria cerasiformis	FACU	20 ✓		Galium aparine	FACU	T
	Rubus parviflorus	FAC-	10		Holcus lanatus	FAC	5
	Rubus spectabilis	FAC+	5		Geum macrophyllum	FACW-	T
	Rubus ursinus	FACU			Epilobium ciliatum	FACW	T

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 25%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Typic Xerofluvents
Taxonomy: Typic Xerofluvents
Drainage Class:
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-8	7.5YR 2.5/1	—	Sandy loam w/ gravel + cobble
A_2	8-14	7.5YR 3/1	—	" "

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: rock refusal @ 14

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >14" Depth to Free Water: >14"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-13 in in an upland forest adjacent to wetland WPL-2

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 27, 2005
Site Location: Water Pipeline and Levee
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-14 Site Location: Wetland WPL-2

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Oenanthe sarmentosa	OBL	20 ✓
					Spiraelea polyrhiza	OBL	50 ✓
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class:
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-6	10YR 3/1	—	Silty clay

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: 5" Depth to Saturation: 0" Depth to Free Water: 0"

Primary Hydrology Indicators:
- [X] Inundated
- [X] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM/Riverine

Comments: SP-14 is in Wetland WPL-2, which is downstream of WPL-1. The wetland appears to have been formed by the construction of a road. The culvert under the road is a constricted outlet.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: WasteWater Pipeline Routes
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-15 Site Location: Wetland WP-1
Fieldwork Date: July 27, 2005
County: Clallam State: WA
Investigator(s): J. Walker, L. Miller

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Oenanthe sarmentosa	OBL	50 ✓
					Ranunculus repens	FACW	5
					Rumex obtusifolius	FAC	T
*Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Oxyaquic Vitrandic Haploxerepts Drainage Class: moderately well
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-4	10YR 3/2	7.5YR 4/6 common, fine, distinct	loamy sand
A_2	4-9	10YR 4/2	" "	loamy sand w/ gravel + cobbles

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: > 9" Depth to Free Water: > 9"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☒ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☒ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: SP-15 is located in a ditch - H_2O appears to be standing @ 6" in winter by OHWM - appears to be 3.5 feet, soil is still moist

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM / ~~[illegible]~~ Depressional

Comments: SP-15 is in wetland WP-1, which is @ the bottom of a roadside ditch. The ditch does not appear to be maintained and drains west through a culvert, and over a slope into Dry Creek

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 27, 2005
Site Location: Wastewater Pipeline
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-16 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Acer macrophyllum	FACU	60 ✓	Herbs	Polystichum munitum	FACU	60 ✓
	Alnus rubra	FAC	10				
* Shrubs	Rubus ursinus	FACU	T				
	Holodiscus discolor	—	10				
	Rubus parviflorus	FAC-	5				
	Rubus spectabilis	FAC+	2				
	Sorbus sucuparia	—	2				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 0%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Oxyaquic Vitrandic Haplokerepts Drainage Class: Moderately well
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR3/3	—	Sandy loam w/ gravel, cobbles

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-16 is adjacent to Wetland WP-1 (which is in the bottom of a roadside ditch)
SP-16 is upslope

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 28, 2005
Site Location: Elwha Dam
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-21 Site Location: Wetland ED-1

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	90 ✓
					Holcus lanatus	FAC	5
					Petasites palmatus	FAC	2
					Adiantum pedatum	FAC	5
					Anaphalis margaritacea	—	2
* Shrubs					Tolmiea menziesii	FAC	2

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 ✓ = dominant species

Is the hydrophytic vegetation criteria met? Yes [X] No [ ] * = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 71 Terbies very gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: Well Drained

On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR 3/2	—	Sandy loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma ~~and redox within 10" bgs~~
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: 0 Depth to Free Water: 15"

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM/~~[illegible]~~ Depressional

Comments: Wetland ED-1 is very small: 5.5' x 9.5'

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Port Angeles Water Treatment Plant
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-22 Site Location: Wetland WTP-1
Fieldwork Date: July 28, 2005
County: Clallam State: WA
Investigator(s): J. Walker, L. Miller

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Juncus effusus	FACW	70 ✓
					Agrostis capillaris	FAC	30 ✓
					Epilobium ciliatum	FACW	5
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 52 Pits Taxonomy: N/A Drainage Class: N/A
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
~~A~~ A1	0-3	2.5Y 4/2	none	si cl lm (gravels, cobbles)
A2	3-9	2.5Y 4/2	10YR 4/6 cmn fine	sandy loam (gravels, cobbles)
	9	rock refusal		

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >9" Depth to Free Water: >19"

Primary Hydrology Indicators:
☐ Inundated
☒ Saturated within 12" bgs (assumed)
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Soil is moist. Water is likely perched in wet season; wetland hydrology is assumed.

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM/Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 29, 2005
Site Location: Hot Springs Rd. Private Residences
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-23 Site Location: Wetland PR-1

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	15	Herbs	Phalaris arundinacea	FACW	100 ✓
					Urtica dioica	FAC+	5
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 %
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR 3/1	—	Sandy loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma ~~and redox within 10" bgs~~
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☒ Saturated within 12" bgs ← in other parts of wetland assumed for this alternative in growing season
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Soil is moist in July, other parts of wetland inundated and/or saturated at time of site visit

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PFO / Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 29, 2005
Site Location: Hot Springs Road Private Residences
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller
Transect/Plot: SP-24 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Acer macrophyllum	FACU	20 ✓	Herbs	Bromus ~~[illegible]~~ sitchensis	—	20 ✓
					Cirsium arvense	FAC-	T
					Urtica dioica	FAC+	35 ✓
					Pteridium aquilinum	FACU	2 ~~[illegible]~~
* Shrubs	Symphoricarpos albus	FACU	80 ✓				
	Oemleria cerasiformis	FACU	5				
	Rubus ursinus	FACU	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 25%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	7.5YR 3/1	—	Sandy loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and ~~redox within 10" bgs~~
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: no wetland hydrology indicators present, dry soil, typographically higher than SP-23 (wetland plot)

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Hot Springs Road Private Residences
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-25 Site Location: Wetland PR-2
Fieldwork Date: July 29, 2005
County: Clallam State: WA
Investigator(s): J. Walker, L. Miller

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Phalaris arundinacea	FACW	80 ✓
					Ranunculus repens	FACW	20 ✓
					Holcus lanatus	FAC	T
* Shrubs	Rosa nutkana c.f.	FAC	7				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-	2.5Y 3/2	5YR 3/4 faint, medium	sandy clay loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
- [ ] Inundated
- [ ] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [X] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: Soil is moist, wetland is at base of short slope in depression

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM / Depressional

Comments: SP-25 is in a wetland in a pasture undergoing active grazing

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Hot Springs Road Private Residences
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-26 Site Location: Wetland PR-3
Fieldwork Date: July 29, 2005
County: Clallam State: WA
Investigator(s): J. Walker, L. Miller, B. Kidder

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Agrostis exarata	FACW	20 ✓
					Carex obnupta	OBL	2
					Carex arcta	OBL	60 ✓
* Shrubs	Salix sitchensis	FACW	5				
	Rosa nutkana c.f.	FAC	50 ✓				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic XeroFluvents Taxonomy: Typic XeroFluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-15	10YR 4/2	7.5YR 4/6 common fine	silty clay loam
		10YR 5/3		

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >15" Depth to Free Water: >15"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☒ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☒ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Wetland lies in topographic depression and contains obligate plant species

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM / Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: July 29, 2005
Site Location: Hot Springs Road Private Residences
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, L. Miller, B. Kiefer
Transect/Plot: SP-27 Site Location:

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Holcus lanatus	FAC	40 ✓
					Cirsium arvense	FAC-	15
* Shrubs	Rubus spectabilis	FAC	20 ✓				
	Crataegus monogyna	FAC-	10				
	Oemleria cerasiformis	FACU	7				
	Rubus ursinus	FACU	20 ✓				
	Rosa nutkana	FAC	40 ✓				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 75%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-17	10YR3/2	—	silt loam, granular

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [ ] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [ ] No [X]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: >17" Depth to Free Water: >17"

Primary Hydrology Indicators:
- [ ] Inundated
- [ ] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [X]

Comments:

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Hot Springs Road Private Residences
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-28 Site Location:
Fieldwork Date: July 28, 2005
County: Clallam State: WA
Investigator(s): J. Walker, L. Miller

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	25 ✓	Herbs	Phalaris arundinacea	FACW	60 ✓
	Acer macrophyllum	FACU	25 ✓		Digitalis purpurea	FACU	5
	Salix sitchensis	FACW	5				
	Rubus spectabilis	FAC+	35 ✓				
* Shrubs	Oemleria cerasiformis	FACU	15				
	Sambucus racemosa	FACU	2				
	Rubus parviflorus	FAC-	20 ✓				
	Hedera helix	—	40 ✓				
	Rubus ursinus	FACU	30 ✓				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 42%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-18	10YR 3/2	—	loamy sand, granular

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >18" Depth to Free Water: >18"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-28 is near wellhead on a slope above an Elwha River sidechannel

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Glines Canyon Dam
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-29 Site Location:
Fieldwork Date: July 29, 2005
County: Clallam State: WA
Investigator(s): J. Walker, N. Herlocker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [X]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Carex amplifolia	OBL	70 ✓
					Holcus lanatus	FAC	30 ✓
					Epilobium ciliatum	FACW	5
					Agrostis capillaris	FAC	5
					Ranunculus repens	FACW	5
* Shrubs					Equisetum arvense	FAC	T
					Carex pachystachya	FAC	T

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 71 Terbies very gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: Well drained
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-6	10YR 2/2	10YR 3/4 few, large, distinct	
B	6-12	10YR 3/1		

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: ~13" Depth to Free Water: ~13"

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs (earlier in year)
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM/ Lake Fringe

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Glines Canyon Dam
Applicant/Owner: Bureau of Reclamation
Transect/Plot: sp-30 Site Location:
Fieldwork Date: July 29, 2005
County: Clallam State: WA
Investigator(s): J. Walker, N. Herlocker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Dactylis glomerata	FACU	20 ✓
					Taraxacum officinale	FACU	10
					Crepis capillaris	FACU	5
					Hypochaeris radicata	FACU	20 ✓
					Agrostis capillaris	FAC	40 ✓
					Holcus lanatus	FAC	30 ✓
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 57%
Is the hydrophytic vegetation criteria met? Yes [X] No [X]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 71 Terbies very gravelly sandy loam Taxonomy: mesic Dystric Xerochrepts Drainage Class: Well Drained
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-7	10YR 3/2	—	Silt loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [ ] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [ ] No [X]

Comments: rock refusal @ 7"

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: >7" Depth to Free Water: 7"

Primary Hydrology Indicators:
- [ ] Inundated
- [ ] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [X]

Comments:

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Private Residence (Greenacres)
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-31 Site Location: Wetland K
Fieldwork Date: August 2, 200
County: Clallam State: W
Investigator(s): J. Walker, G. Mazer

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Salix (weeping willow)	FAC+	80 ✓	Herbs	Ranunculus repens	FACW	40 ✓
	↳ Salix babylonica				Equisetum telmateia	FACW	35 ✓
					Geum macrophyllum	FAC	40 ✓
					Epilobium ciliatum	FACW	5
					Agrostis gigantea c.f.	FAC	5
* Shrubs	Rubus armeniacus	FACU	70 ✓				
	Rubus spectabilis	FAC+	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 80%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class:
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A1	0 - 4	10YR 3/1	—	
A2	4 - 16	2.5Y 3/1	—	

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: wood + blankets @ top of soil profile

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: > 16" Depth to Free Water: > 16"

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs ← assumed earlier in growing season
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: wetland is located in depression that appears to retain water early in growing season

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM / Depressional

Comments: SP-31 is near an abandoned in a small emergent wetland surrounded by Rubus armeniacus and pasture grasses.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: August 2, 2005
Site Location: Private Residence (Green Crow)
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, G. Mazer
Transect/Plot: SP-32 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Dactylis glomerata	FACU	50 ✓
					Agrostis capillaris	FAC	20 ✓
					Equisetum telmateia	FACW	10
					Elytrigia repens (=Agropyron r.)	FAC-	5
					Holcus lanatus	FAC	15
* Shrubs					Festuca arundinacea	FAC-	5

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Typic Xerofluvents
Taxonomy: Typic Xerofluvents
Drainage Class:
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR 3/2	—	loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-32 is in an upland near Wetland K

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Private Residences
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-33 Site Location: Wetland M
Fieldwork Date: August 2, 2005
County: Clallam State: WA
Investigator(s): J. Walker, G. Mazer

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [X]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	40 ✓
					Bromus sitchensis	–	5
					Agrostis capillaris	FAC	60 ✓
					Tolmiea menziesii	FAC	10
					Epilobium ciliatum	FACW	2
*Shrubs	Rubus spectabilis	FAC+	30 ✓		Equisetum arvense	FAC	5
					Poa palustris/pratensis	FAC	T

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Neitkon very gravelly sandy loam Taxonomy: Dystric Xerorthents Drainage Class: excessively well
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-3	10YR 3/2	—	
A_2	3-16	2.5Y 3/2	7.5YR 5/6 common, prominent, medium	silty clay loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs ← assumed earlier in growing season
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: assumed wetland hydrology – appears to be fed by seep earlier in growing season. major slippage on slope

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM/Depressional

Comments: SP-33 is in a wetland that is located between a road and the theda slope.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Private Residences
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-34 Site Location: Wetland N
Fieldwork Date: August 2, 2005
County: Clallam State: WA
Investigator(s): J. Walker, G. Mazer

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Equisetum telmateia	FACW	95 ✓
					Galium aparine	FACU	T
					Bromus sitchensis	—	5
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]
✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Neilton very gravelly sandy loam Taxonomy: Dystric Xerorthents Drainage Class: excessively well
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-6	10YR 3/1	—	clay loam
A_2	6-10	10YR 4/3	—	gravelly sand loam
A_3	10-16	10YR 3/1	—	clay loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: Depth to Free Water: >16"

Primary Hydrology Indicators:		Secondary Hydrology Indicators:	
[ ] Inundated	[ ] Drift lines	[ ] Oxidized Root Channels within 12" bgs	[ ] FAC- neutral test
[X] Saturated within 12" bgs (not in SP, but w/in wetland)	[ ] Sediment deposits	[ ] Local soil survey	[ ] Water-stained leaves
[ ] Wetland drainage pattern	[ ] Water marks	[X] Other:	

Is the hydrology criterion met? Yes [X] No [ ]

Comments: Soil is moist in August, located @ base of slope, water appears to come from seasonal seep

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM, Depressional

Comments: SP-34 is in a wetland @ the base of a slope

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Private Residences
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-35 Site Location:
Fieldwork Date: August 2, 2005
County: Clallam State: WA
Investigator(s): J. Walker, Co. Mazer

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Urtica dioica	FAC+	100 ✓
					Ranunculus repens	FACW	20 ✓
					Tellima grandiflora	NE	5
					Bromus sitchensis	—	5
					Lactuca muralis		T
* Shrubs	Acer macrophyllum	FACU	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Neilton very gravelly sandy loam Taxonomy: Dystric Xerorthents Drainage Class: excessively well
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-12	10YR 3/3	—	loam,

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments: rock refusal @ 12"

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: >12" Depth to Free Water: >12"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: no wetland hydrology indicators, soil is dry

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-35 is up slope from wetland N b/t the slope and the road

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Surface Water Intake Rd
Applicant/Owner: Bureau of Rec.
Transect/Plot: SP-36 Site Location:
Fieldwork Date: 8/3/05
County: Clallam State: WA
Investigator(s): JW + GM

Normal circumstances exist on site? Yes ☑ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☑
Is this a potential Problem Area? Yes ☐ No ☑

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	*			Herbs	Clematis vitalba *	—	35% ✓
	Alnus rubra *	FAC	70% ✓		Elymus glaucus	FACU	10%
					Dactylis glomerata *	FACU	25% ✓
					Agrostis sp.	FAC	2%
	Rubus ursinus	FACU	15%		Hypericum perforatum	—	2%
Shrubs	Symphoricarpos albus *	FACU	35% ✓		Holcus lanatus	FAC	1%
	Oemleria cerasiformis	FACU	4%				
	Rubus armeniacus	FACU	2%				
	Salix sitchensis	FACW	2%				
	Acer macrophyllum (sdlg)	FACU	2%				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 25%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☑
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Nailton very gravelly sandy loam Taxonomy: Dystric Xerorthents Drainage Class: excessively well
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-13"	10YR 3/2	—	loamy sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☑

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐
Field Data: Growing Season? Yes ☑ No ☐
Depth of Inundation: — Depth to Saturation: >18" bgs Depth to Free Water: >18" bgs

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☑

Comments: Plot is situated >4' above the OHWM of Elwha R.

Determination

Wetland? Yes ☐ No ☑
Cowardin Class/ HGM Class: Upland

Comments: Plot situated on mid-channel island with convex profile and coarse, well-drained soil

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 25 July 2005
Site Location: Federal Levee North Terminus
County: Clallam State: WA
Applicant/Owner: Bur of Rec
Investigator(s): NBH, WTK, KCK (Kim Kwarsick NPS)
Transect/Plot: SP-40 Site Location: North end of levee about 100 feet south of beach

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☒ No ☐ Floodplain delta / beach dune system

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Equisetum arvense	FAC	15
					Festuca arundinacea	FAC-	10
					Elytrigia repens	FAC-	30 ✓
					Holcus lanatus	FAC	5
					Phalaris arundinacea	FACW	5
* Shrubs	Spiraea douglasii	FACW	10		Elymus mollis	FACU	5 (Cooke)
✓	Rosa nutkana	FAC	50 ✓				
	Sambucus racemosa	FACU	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: Ø ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒ * = also includes saplings (woody plants <20 ft tall)

Comments: Mix of marginal veg Spiraea not looking hardy

Soil

Mapped Series: 3 Beaches Taxonomy: N/A Drainage Class: N/A
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion: Yes

Horizon	Depth"	Matrix Color	Redoximorphic Features	Texture, Other
A	0-5	10 YR 2/2	—	gravelly loamy sand
B	4-16	10 YR 3/1	—	gravelly sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma ~~and redox. within 10" bgs~~
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: 0-5 inches very thick root mat w/ good decomposition; B horizon color of parent gravels

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: No hydric indicators in very sandy deep soils. No spodic horizon w/in 16"

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: N/A

Comments: sample plot on landward side of outer beach dune at end of proposed levee

FL-A

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 7/25/05
Site Location: West of Federal Levee, Lower Elwha/Klallam Res
County: Clallam State: WA
Applicant/Owner: Bureau of Rec.
Investigator(s): NBH, WTK
Transect/Plot: SP-41 Site Location: 300' south from end of levee road FL-A

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Thuja plicata	FAC	10	Herbs	Equisetum telmateia	FACW	5
	Alnus rubra	FAC	15		Polystichum munitum	FACU	5
					Glyceria sp.	—	T
* Shrubs							
	Lonicera involucrata	FAC+	50 ✓				
not rooted in wetland *	Rubus armeniacus	FACU	30				
	Rubus spectabilis	FAC+	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: RUAR not rooted in wetland; lying prostrate on LOIN.

Soil

Mapped Series: Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-9	2.5Y3/1	N/A	sandy clay loam
B	9-16	2.5Y4/1	N/A	compressed sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma ~~and redox within 10" bgs~~
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☒ Sandy soils - High organic content in surface horizon
☒ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: soils slightly damp under the forest canopy
Matrix color reduced. Hard pan between horizons

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☒ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Possible inundation or high groundwater saturation during high river flows and extra high tides
Assumed wet during winter/spring based on veg. & soil

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PFOC / Depressional

Comments: Wetland likely continues west beyond study area.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration Fieldwork Date: 7/25/2005
Site Location: Federal Levee @ Lower Elwha / Klallam reservation County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation Investigator(s): NBH, WTK
Transect/Plot: FL-SP-42 Site Location: 23' west of Fed. Levee, ±100' south of SP-2 FL-A UPLAND
Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	70 ✓	Herbs	Equisetum telmateia	FACW	5
					Urtica dioica	FAC+	5
					Polystichum munitum	FACU	5
* Shrubs	Sambucus racemosa	FACU	30 ✓				
	Rubus armeniacus	FACU	40 ✓				
	Viburnum sp.	—	T				
	Rubus spectabilis	FAC+	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 33%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Alders rooted in both upland and adjacent wetland.

Soil

Mapped Series: Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-21	10YR 3/1	none	Sandy loam
		2.5Y 3/1		

- ☐ Histosol/Histic epipedon
- ☐ Sulfidic odor
- ☐ Concretions within 3" bgs
- ☒ Low matrix chroma and redox. within 10" bgs
- ☐ Gleyed within 10" bgs
- ☐ On Hydric Soils List and matches profile
- ☐ Reducing conditions
- ☐ Aquic moisture regime
- ☐ Sandy soils - High organic content in surface horizon
- ☐ Sandy soils - Organic streaking or pan
- ☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated within 12" bgs
- ☐ Wetland drainage pattern
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Water marks

Secondary Hydrology Indicators:
- ☐ Oxidized Root Channels within 12" bgs
- ☐ Local soil survey
- ☐ Other:
- ☐ FAC- neutral test
- ☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: No evidence of prolonged saturation

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: No criteria met. Upland paired plot for FL-SP-2.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 7/25/05
Site Location: Federal Levee / Lower Elwha / Klallam Reservation
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-43 Site Location: East side of levee in open herbaceous community FL-B

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	none			Herbs	Cirsium arvense	FAC-	45 ✓
					Equisetum arvense	FAC	30 ✓
					Agrostis sp	—	5
					Elytrigia repens	FAC-	15
					Festuca arundinacea	FAC-	T
* Shrubs	Rubus armeniacus *	FACU	15				
	Salix sp.	—	T				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50 % ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes [ ] No [ ] * = also includes saplings (woody plants <20 ft tall)

Comments: * Rooted on levee slope out of wetland. Other dominant beyond plot is Holcus lanatus
Juncus effusus found just beyond plot. CIAR likely dominant in late summer only

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoaquepts Drainage Class: Poorly drained
On Hydric Soils List? Yes [X] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-13	10YR 3/1	none	very fine sandy loam
B	13-17	2.5Y 4/2	7.5YR 4/6 small, common, faint	" "

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: No gravel. Moist despite dry hot climate & lack of shade

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
- [ ] Inundated
- [✓] Saturated within 12" bgs *
- [✓] Wetland drainage pattern *
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: * Assumed to be saturated / inundated for appropriate length of time during early growing season

Determination

Wetland? Yes [✓] No [ ]
Cowardin Class/ HGM Class: PEM / depressional closed

Comments: At upper margin of wetland; topography slopes gently to the east where more obviously wet

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 25 July 2005
Site Location: Federal Levee / LEKT
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-4 Site Location: levee slope about 20 ft wide from road edge FL-B UPLAND

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ linear along levee slope + just beyond toe of slope

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Equisetum arvense	FAC+	50 ✓
					Cirsium vulgare	FACU	5
					Anthoxanthum odoratum	FAC	10
					Plantago lanceolata	FAC	5
					Dactylis glomerata	FAC	5
✓ * Shrubs	Rubus armeniacus	FACU	60		Agrostis sp		

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒ * = also includes saplings (woody plants <20 ft tall)

Comments: subdominants indicate upland community

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoquepts Drainage Class: Poor
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-11	10YR3/1	—	coarse sandy loam w/ some gravel
	11+ rock refusal		—	road fill

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: very dry compared to FL-SP-4

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: elevation and gradient above surrounding ground limit saturation

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class:

Comments: Sample plot about 3 vertical feet above FL-SP-4 and 25 ft horizontally

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 26 July 2005
Site Location: Elwha – Klallam Reservation
County: Clallam State: WA
Applicant/Owner: Bureau of Rec
Investigator(s): WTK, NBH
Transect/Plot: SP-45 Site Location: East side levee about 500 feet N of gate, 500 south of North terminus

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Cirsium arvense	FAC-	60 ✓
					Equisetum telmateia	FACW	80 ✓
					Agrostis sp.		10
					Elytrigia repens	FAC-	10
					Holcus lanatus	FAC	10
Shrubs	* Spiraea douglasii	FACW	20 ✓				
	Rubus armeniacus	FACU	20				
	Populus balsamifera	FAC	T				
	Salix scouleriana	FAC	T				
	Sambucus racemosa	FACU	T				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes [ ] No [X] * = also includes saplings (woody plants <20 ft tall)

Comments: subdominants are mostly upland plants

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoquepts Drainage Class: Poor
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-6	10YR 3/1	—	sandy clay loam
B	6-16	10YR 3/1	—	very fine sandy loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
- [ ] Inundated
- [ ] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [X]

Comments: soils dry

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class:

Comments: plot along an upland/wetland margin that stretches along E side of levee for several hundred feet. Community change east to more wetland conditions in a swale leading from old hatchery

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 26 July 2005
Site Location: Lower Elwha Klallam Reservation
County: Clallam State: WA
Applicant/Owner: Bureau of Rec
Investigator(s): WTK, N H
Transect/Plot: SP-46 Site Location: east side of levee, 800 hundred feet south of levee north terminus FL-C

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☒

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Holcus lanatus	FAC	30 ✓
					Elytrigia repens	FAC-	5
					Agrostis sp		5
					Phalaris arundinacea	FACW	T
					Dactylis glomerata	FAC	5
✓ * Shrubs	Spiraea douglasii	FACW	25		Urtica dioica	FAC+	5
	Rubus armeniacus	FACU	10		Festuca arundinacea	FAC-	10
	Rosa nootkana	FAC-	10				
	Symphoricarpos albus	FACU	T				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐ * = also includes saplings (woody plants <20 ft tall)

Comments: vegetation plot not include species rooting on berm

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoaquepts Drainage Class: Poor
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-6	10 YR 3/1	—	sandy clay loam
B+	6-16	10 YR 3/1	—	very fine sandy loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma ~~and redox within 10" bgs~~
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Assume wetter soils during early growing season based on soils and vegetation

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class:

Comments: plot close to berm within 25 ft border

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 7/26/05
Site Location: Federal Levee
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-47 Site Location: FL-C UPLAND

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	none			Herbs	Anthoxanthum odoratum	FACU	30 ✓
					Bromus sp.	assume UPL	10
					Agrostis sp.	assume FAC	30 ✓
					Hypochaeris radicata	FACU?	5
					Elytrigia repens	FAC-	10
*Shrubs	Rubus armeniacus	FACU	50 ✓				
	Spiraea douglasii	FACW	10				
	Rosa sp		5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 33%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments: Growing on steep levee embankment. Spiraea rated in wetland below.

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoaquepts Drainage Class: Poor
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-10"	10YR 4/1	none	Fine sandy loam, granular
	10" +	Rock Refusal		Cobbles (fill)

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma ~~and redox within 10" bgs~~
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: On fill material

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class:

Comments: Upland pair plot for FL-SP-7

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Site Location: Federal Levee
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-48 Site Location: swale for property drainage along east wall of dike FL-D
Fieldwork Date: 26 July 2005
County: Clallam State: WA
Investigator(s): WTK NBH

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☒ No ☐ unnative drainage swale w/ questionable soils and vege

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ linear along swale bottom

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Populus balsamifera	FAC+	100	Herbs	Holcus lanatus	FAC	50 ✓
					Agrostis sp	FAC	50 ✓
					Festuca arundinacea	FAC-	5
* Shrubs	Rubus ursinus	FACU	T				
	Rubus armeniacus	FACU	20				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 75
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: plot is linear about 10 ft wide by 30 ft long

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoquepts Drainage Class: Poor
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-2	10YR 3/2		topsoil, many roots sandy loam
B	2-5	10YR5/1		sand cobble gravel
5+	rock refusal			

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments: gravel and cobble throughout, alluvial fan

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐
Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: hydrology assumed based on landscape position, swale shape and convenience features culvert and riprap directly upstream

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: palustrine forested / Riverine

Comments:
Upland plot unnecessary - dike wall

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 26 July 2005
Site Location: Federal Levee
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-49 Site Location: Dike wall, upland plot to FL-SP-9 FL-D-UPLAND

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☒ No ☐ Dike wall

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Anthoxanthum odoratum	FACU	30 ✓
					Elytrigia repens	FAC-	5
					Vicia hirsuta	NOL	15
					Rumex acetosella	FACU+	T
					Dactylis glomerata	FACU	5
* Shrubs	Symphoricarpos albus	FACU	5		Agrostis sp.	—	25
	Acer macrophyllum	FACU	<5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: Ø
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Puget silt loam Taxonomy: Fluvaquentic Endoaquepts Drainage Class: Poor
On Hydric Soils List? Yes ☒ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
	Rock refusal			
		dike wall		

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments: rock fill w/ root mat soil layer about 2 in thick

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 28 July 2005
Site Location: PAWTP
County: Clallam
State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): All
Transect/Plot: SP-60 Site Location: behind compost building

Normal circumstances exist on site? Yes ☐ No ☒ Embankment dug into hillside parent material
Significantly disturbed (atypical situation)? Yes ☒ No ☐
Is this a potential Problem Area? Yes ☒ No ☐

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Agrostis capillaris	FAC	60 ✓
					Holcus lanatus	FAC	15
					Chrysanthemum leucanthemum	—	T
* Shrubs	Acer macrophyllum	FACU	5				
	Rubus lucodermis	—	T				
✓	Cytisus scoparius	—	30 ✓				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50 %
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 52/ Pits
Taxonomy: N/A
Drainage Class: N/A
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
		Parent Material / Bedrock		

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration Project
Fieldwork Date: 29 July 2005
Site Location: Hot Springs Private Residences
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
SP-35
Transect/Plot: SP-61 Site Location: Hot spring Road (NW side of Rd) @ driveway to PR-2
Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ shrub plot only 2/3 due to paved road

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Malus sp.	10	—	Herbs	Pteridium aqualinum	FACU	25 ✓
	Alnus rubra	5	FAC		Ranunculus repens	FACW	60 ✓
	Populus balsamifera	5	FAC		Phleum pratense	FAC-	5
					Equisetum telmateia	FACW	20 ✓
					Agrostis capillaris	FAC	10
* Shrubs	Cratagecus douglassii	10	FAC		Holcus mollis	FACU	10
	Rosa nutkana	20	FAC ✓				
	Oemlaria cerasiformis	5	FACU				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 75 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐ * = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-15	10YR 2/2	none	silt loam
	15+	fill		

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: No indicators other than marginally facultative veg.

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 28 July 2005
Site Location: Lower Elwha Dam
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-62 Site Location: River left lake fringe about 300 ft upstream of dam
Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ lake fringe vege community about 4 feet

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Carex sp	FACW	40 ✓
					Juncus effesus	FAC+	10
					Juncus articulatus	FAC+	10
					Holcus lanatus	FAC	20 ✓
					Myosotis laxa	OBL	15
✓ * Shrubs	Alnus rubra	FAC	30		Geum macrophyllum	FACW-	10
					Mentha piperita	FACW+	10
					Plantago lanceolata	FACU	5
					Agrostis capillaris	FAC	10
					Juncus acuminatus	OBL	10

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐ * = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 71 Terbies very gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: Well Drained
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-4	7.5YR 3/2	—	very gravelly sandy clay loam
B	4-12	2.5Y 2.5/1	—	gravelly sandy loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☒ Reducing conditions
☒ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐ rotting roots

Comments: A horizon damp but not saturated B horizon damp to saturated w/ increasing depth

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐
Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☒ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: lake fringe wetland

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: LEM / Lake Fringe

Comments:
Wetland about 5 feet wide along lake fringe

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 7/28/05
Site Location: Elwha Dam
County: Clallam
State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-63 Site Location: Fringe of lake (contained river)

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	20 ✓	Herbs	Holcus lanatus	FAC	20 ✓
	Pseudotsuga menziesii	FACU	5		Cirsium arvense	FAC-	10
					Agrostis capillaris	FAC	20 ✓
					Convolvulus sp.	NL	10
					Lathyrus latifolia	NL	20 ✓
* Shrubs	Rubus spectabilis	FAC+	5		Rumex crispus	FAC+	T
	Rubus parviflorus	FAC-	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments: On slope ± 3' above ED-2, SP-1

Soil

Mapped Series: 71 Terbies very gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: Well Drained
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-5	10YR 3/2	none	Silt loam, granular
B	5-16	10YR 2/2	none	Sandy loam, wood (decomposing) & gravel

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments: No hydric indicators

Hydrology

Recorded Data:
Recorded Data Available: ☒ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: Water levels are kept at a ± constant level by dam - Capillary fringe stay below this point

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: No criteria met

Notes on reverse

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 29 July 2005
Site Location: Training Dike
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): WTK, NBH
Transect/Plot: T SP-64 Site Location: sliver between dike and road defined by stream course TD-A

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ linear stream corridor about 9 feet wide

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Acer macrophyllum	FACU		Herbs	Tolmiea menziesii	FACW	25 ✓
Trees	Acer circinatum	FACU	50	Herbs	Athyrium filix-femina	FAC	25 ✓
Trees	Alnus rubra	FAC	35	Herbs			
Trees	Populus balsamifera	FAC		Herbs			
Trees				Herbs			
* Shrubs	Rubus spectabilis	FAC+	20 ✓	Herbs			
Shrubs	Polygonum cuspidatum	FACU	< 5	Herbs			
Shrubs	Sambucus racemosa	FACU	< 5	Herbs			
Shrubs				Herbs			
Shrubs				Herbs			

rooted on slope above wetland

out of wetland →

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐ * = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-10	10YR2/1	—	gravelly clay loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: Ø Depth to Free Water: 9

Primary Hydrology Indicators:
☐ Inundated
☒ Saturated within 12" bgs
☒ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments:

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PSS

Comments: stream in small swale between road and levee walls
small stream 2 ft away from sample plot at ~~about same~~ elevation
1 9" lower

More notes on back

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha Restoration
Fieldwork Date: 29 July 2005
Site Location: Training dike
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-65 Site Location: between levee and road under cedar TD-A UPLAND

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Acer macrophyllum	FACU	20	Herbs	Galium (star flower	FACU	30
	Thuja plicata	FAC	20		Polygonum cuspidatum	FAC	30
	Populus balsamifera	FAC	60		Polystichum munitum	FACU	5
	Alnus rubra	FAC	15		Urtica dioica	FAC+	10
* Shrubs	Acer circinatum	FAC−	20				
	Oemleria cerasiformis	FACU	30				
	Rubus spectabilis	FAC+	5				
	Rubus ursinus	FACU	<5				
	Symphoricarpos albus	FACU	15				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 27 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒ * = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-9	10YR 2/1		loamy sand
	9+ Rock refusal – cobbles			

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒ based on moisture and texture

Comments: soil dry
Sandy parent material very dark

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

Upland area about 30 feet off road and 8 to 10 feet above small stream

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 7/29/2005
Site Location: Training Dike
County: Clallam State: WA
Applicant/Owner: BOR
Investigator(s): NBH, WTK
Transect/Plot: SP-66 Site Location: N-end of levee in active floodplain TD-B

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Populus balsamifera	FAC+	25 ✓	Herbs	Equisetum arvense	FAC.	10
					Phalaris arundinacea	FACW	5
	Thuja plicata	FAC	10 ✓		Lathyrus sp-	—	25 ✓
	Acer macrophyllum	FACU	10				
*Shrubs	Rubus spectabilis	FAC+	4				
	Salix sitchensis	FACW	3				
	Cornus sericea	FACW	T				
	Alnus rubra	FAC	25 ✓				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes [X] No [ ] * = also includes saplings (woody plants <20 ft tall)

Comments: Also areas w/ dense willows and depressions w/ open water.

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other

[ ] Histosol/Histic epipedon
[ ] Sulfidic odor
[ ] Concretions within 3" bgs
[ ] Low matrix chroma and redox. within 10" bgs
[ ] Gleyed within 10" bgs
[ ] On Hydric Soils List and matches profile
[ ] Reducing conditions
[X] Aquic moisture regime
[ ] Sandy soils - High organic content in surface horizon
[ ] Sandy soils - Organic streaking or pan
[X] Other: see below

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: Active floodplain w/ 70% cobble and 30% gravel. No soil formation

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: 3' feet

Primary Hydrology Indicators:
[ ] Inundated
[ ] Saturated within 12" bgs
[X] Wetland drainage pattern
[X] Drift lines
[X] Sediment deposits
[X] Water marks

Secondary Hydrology Indicators:
[ ] Oxidized Root Channels within 12" bgs
[ ] Local soil survey
[ ] Other:
[ ] FAC- neutral test
[ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: Flood plain area has distinctly FAC spp. Beyond is characterized in TD-SP-2

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PFO / Riverine

Comments: Water travelling N spills into the area past levee @ high water. Much recent alluvial deposits. Likely due to levee.

Elwha Rd W/L A

Wetland ER-A

W/l plot

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 8/3/2005
Site Location: Elwa River Road - Dry Crk Ath. well Field
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: EL SP-67 Site Location: 500' west of Laird Rd on North side of road, 4' below pavement.

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [X] Along road, 8 feet in from pavement

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Pseudotsuga menziesii	FACU	20 ✓	Herbs	Carex obnupta	OBL	20 ✓
	Salix Hookeriana	FACW-	20 ✓		Holcus lanatus	FAC	15
	Alnus rubra	FAC	10		Agrostis sp.	assume FAC	15
	Thuja plicata	FAC	5		Carex pachystachya c.f.	assume FAC	5
					Juncus effusus	FACW	15
Shrubs	Cornus sericea	FACW	20 ✓		Equisetum arvense	FAC	5
					Vicia cracca	FACU	T
					Festuca arundinacea	FAC-	T

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 75%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 12 Clallam gravelly sandy loam Taxonomy: mesic Dystric Xerochrepts Drainage Class: Moderately Well Drained
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-8	10YR 3/2	5YR 4/6 medium, comm, prominent	Sandy clay loam, coarse granular
Bg	8-16	10YR 3/2	7.5YR 5/8 medium, comm. prominent	Gravel

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: Some moisture in soil

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [X] landowner says wet in winter; has been id'd as wetland by corps/county.

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs *
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

?

Is the hydrology criterion met? Yes [X] No [ ]

Comments: * assumed saturated during springtime based on topography and vegetation

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PFO, PSS, PEM / Depression

Comments: Drains to swale according to landowner
Landowner identified area as wetland per previous delineation

Elwha Rd W/L A upland plot

Ernie Griffith
land delineated 3yr ago

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 8/3/2005
Site Location: Elwha River Rd - Dry Crk Alt. Well Field
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH/WTK
Transect/Plot: SP-68 Site Location:

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ 10 ft in from road edge

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Pseudotsuga menziesii	FACU	45	Herbs	Equisetum telmateia	FAC+	15
	Alnus rubra	FAC	5		Dactylis glomerata	FAC	<10
	Thuja plicata	FAC	10		Vicia cracca	FACU	15
	Populus balsamifera	FAC	<10		Elymus glaucus	FACU	<5
	Salix sitchensis	FAC	<10				
Shrubs	Symphoricarpos albus	FACU	30				
	Rosa nutkana	FAC	20				
	Amelanchier alnifolia	FACU	20				
	Cornus sericea	FACW	20				
	Acer macrophyllum	FACU	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 40
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 12 Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: Moderately Well
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
Om	0-2			
A	2-6	10 YR2/2	—	sandy loam
	6+ Root	refusal		

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments: Soils dry
Tried for more suitable plot location, but root refusal throughout

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☐ No ☒
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments:

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 8/3/05
Site Location: Elwha R. Road - Alt. Well Field
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-69 Site Location: Drainage ditch along south edge of Rd.

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Agrostis sp	assume FAC	30 ✓
					Juncus effusus	FACW	20 ✓
					Holcus lanatus	FAC	15
					Anthoxanthum odoratum	FACU	5
*Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes [X] No [ ] * = also includes saplings (woody plants <20 ft tall)

Comments: Narrow band of hydrophytic veg. North side of ditch mowed.

Soil

Mapped Series: 12 Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: Moderately Well
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0+	10YR 2/2	10YR 5/6	Rock fill with shallow soil horizon

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [X] Aquic moisture regime → neighbors report ditch is wet
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
- [X] Inundated *
- [X] Saturated within 12" bgs *
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [ ]

Comments: *Assumed saturated / inundated in spring for > 12.5% of growing season

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM, depression

Comments: Drainage Ditch ± 3' wide, 3' south of Elwha Riv. Rd. Drains north via culverts to wetland ER-A. Upland plot would be road fill supporting upland weeds. (PTAQ, DA (A, TAOF). Private fenced land to the south.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 8/2/05
Site Location: ESWI / Dry Creek Alt. Well Field
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH / WTK
Transect/Plot: SP-7D Site Location: Isthmus between two open water lobes Wetland L

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	40 ✓	Herbs	Myosotis laxa	OBL	20 ✓
	Populus balsamifera	FAC	10		Phalaris arundinacea	FACW	15
					Agrostis capillaris	FAC	30 ✓
					Ranunculus repens	FACW	20 ✓
					Galium trifidum	FACU	15
*Shrubs	Salix lucida	FAC+	10				
	Rubus spectabilis	FAC+	20 ✓				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: 44 Neilton very gravelly sandy loam Taxonomy: mesic Dystric Xerorthents Drainage Class: Excessive
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion: Yes

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-8	2.5Y 4/1	5YR 5/8 and 7.5YR 5/8	Sandy loam with gravels, coarse
B	8-10	10YR 3/1		gravels and cobbles in loamy sand
	10"+		rock refusal	

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [X] Reducing conditions
- [X] Aquic moisture regime (clearly flooded
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: gravel and cobble throughout soil profile

Hydrology

Recorded Data:
Recorded Data Available: [X] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: Ø Depth to Free Water: >10"

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM / OW / PSS / Depressional

Comments: All criteria met

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 8/2/05
Site Location: All Well Field / ESWI
County: Clallam
State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): NBH, WTK
Transect/Plot: SP-71 Site Location: On road embankment along W. edge of wetland "well-H-2" Wetland L upland

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	20 ✓	Herbs	Ranunculus repens	FACW	5
	Acer macrophyllum	FACU	30 ✓		Polystichum munitum	FACU	5
					Aster	NL	3
					Tolmea grandiflora	FAC	5
					Bromus sp.	NL	3
* Shrubs	Oemlaria cerasiformis	FACU	3				
	Sambucus racemosa	FACU	5				
	Rubus parviflorus		10				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒
* = also includes saplings (woody plants <20 ft tall)

Comments: Most of the alder is rooted downslope at edge of wetland

Soil

Mapped Series: 44 Neilton very gravelly sandy loam Taxonomy: mesic Dystic Xerorthents Drainage Class: Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
OM	2-0			leaf litter
A	0+			road fill: gravel, sand, & cobble

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: Depth to Saturation: Depth to Free Water:

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: No indicators

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: Approximately 4' above wetland boundary

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: EWTP
Applicant/Owner: Bureau of Reclamation
Transect/Plot: S1-72 Site Location: NE of overflow outlet for industrial channel and rearing ponds
Fieldwork Date: 3 August 2005
County: Clallam State: WA
Investigator(s): WTK, GJM

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X] upper edge distinguished by sharp bank rise and differing plant commun.

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [X] 30 feet long 12 feet wide long narrow along river bank

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Juncus tenuis	FACW-	30 ✓
					Alopecurus geniculatus	OBL	20 ✓
					Phalaris arundinacea	FACW	5
					Myosotis laxa	OBL	10
					Epilobium ciliatum	FACW-	5
* Shrubs	Salix sitchensis	FACW	10		Sparganium emersum	OBL	20 ✓
					Rumex occidentalis	FACW+	5
					Rumex obtusifolia	FAC	10
					Juncus articulatus	OBL	5

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes [X] No [ ] * = also includes saplings (woody plants <20 ft tall)

Comments: river edge wetland

Soil

Mapped Series: 73 Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion: Yes

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-10	N3/	7.5YR 4/4 prominent, common coarse,	silt loam
	10+ Rock refusal			

[ ] Histosol/Histic epipedon
[ ] Sulfidic odor
[ ] Concretions within 3" bgs
[X] Low matrix chroma and redox. within 10" bgs
[X] Gleyed within 10" bgs
[ ] On Hydric Soils List and matches profile
[ ] Reducing conditions
[X] Aquic moisture regime
[ ] Sandy soils - High organic content in surface horizon
[ ] Sandy soils - Organic streaking or pan
[ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: alluvial deposits

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
[ ] Inundated
[ ] Saturated within 12" bgs
[ ] Wetland drainage pattern
[X] Drift lines
[X] Sediment deposits
[X] Water marks

Secondary Hydrology Indicators:
[ ] Oxidized Root Channels within 12" bgs
[ ] Local soil survey
[ ] Other:
[ ] FAC- neutral test
[ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: soils moist

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM / Riverine

Comments: Wetland O

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration Project
Fieldwork Date: 8/3/05
Site Location: Dry Creek H2O Assoc. Existing well Field
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): GTM
Transect/Plot: S1-T3 Site Location: Elwha River Rd. - well-head on E side of river within the power line ROW.

Normal circumstances exist on site? Yes ☑ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☑
Is this a potential Problem Area? Yes ☐ No ☑

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☑ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Urtica dioica	FAC+	20% ✓
					Agrostis capillaris	FAC	76% ✓
					Elytrigia repens	FAC-	15%
					Holcus lanatus	FAC	2%
*Shrubs	Rosa nutkana	FAC	10%				
	Rubus ursinus	FACU	3%				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☑ No ☐
* = also includes saplings (woody plants <20 ft tall)

Comments: ½ of plot is grassy area mowed regularly + ½ plot is mowed irregularly + dominated by Urtica dioica

Soil

Mapped Series: 73 Typic Xerofluvents
Taxonomy: Typic Xerofluvents
Drainage Class: somewhat excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-10"	10YR 2/2	—	gravelly loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☑

Comments: No hydric soil indicators found.

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☑ No ☐
Depth of Inundation: N/A Depth to Saturation: >18" Depth to Free Water: >18"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☑ Dry soil found in sample pit.

Comments: Flat area within 100-yr fp, but no evidence of recurrent sat'n or inund'n

Determination

Wetland? Yes ☐ No ☑
Cowardin Class/ HGM Class: Upland

Comments:

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Data Sheet #: _____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Date: 2/20/03
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): JAW
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Community ID: _____
Transect ID: _____
Plot ID: SP-17
Remarks (Explain sample location, disturbances, problem areas):

VEGETATION (x each dominant species)

Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
* Phalaris arundinacea	H	60	FACW				
* Cirsium arvense	H	30	FAC-				
* Holcus lanatus	H	30	FAC				
Juncus effusus	H	3	FACW				
Acer macrophyllum	S	5	FACU				
Rubus ursinus	S	10	FACU				
Athyrium filix-femina	H	5	FAC+				
Myosotis sp.	H	15					

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 66 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gage
_____ Aerial Photograph
_____ Other
_____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: 16 (in.)
Depth to Saturated Soil: 10 (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

Sample plot is adjacent to "industrial water channel" which is at least 3' deep. Standing water is present 1' from soil pit.

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-10	A_1	2.5Y 4/2	—	—	gravelly sandy clay loam
10-18	A_2	2.5Y 4/3	—	—	gravelly sandy loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

Soil is very rocky + cobbly

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	**Is this Sampling Point Within a Wetland?**
Hydric Soils Present?	Yes	(No)	
Wetland Hydrology Present?	(Yes)	No	(Yes) No

Remarks:

Sample plot #1 is in a wetland dominated by reed canarygrass that is present on the eastern bank of the industrial channel.

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Data Sheet #: _____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Date: 2/20/03
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): JAW
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Community ID: _____
Transect ID: _____
Plot ID: SP-2 T5

Remarks (Explain sample location, disturbances, problem areas):

VEGETATION (x each dominant species)

Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
* Acer macrophyllum	T	50	FACU				
* Rubus ursinus	S	40	FACU				
Rumex acetosella	H	5	FACU+				
* Elytrigia repens	H	20	FAC-				
Cirsium arvense	H	15	FAC-				
Pseudotsuga menziesii	S	2	FACU				
Nemophila parviflora	H	T	—				
Polystichum munitum	S	3	FACU				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 0 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation not dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gage
- _____ Aerial Photograph
- _____ Other
- _____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: >6 (in.)
Depth to Saturated Soil: >6 (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

no wetland hydrology indicators are present

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-1	O	7.5YR 3/3	—	—	litter
1-6+	A	2.5Y 4/4	—	—	rocky

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

hydric soil indicators are not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)	**Is this Sampling Point Within a Wetland?**
Hydric Soils Present?	Yes	(No)	
Wetland Hydrology Present?	Yes	(No)	Yes (No)

Remarks: Sample plot 2 is located upslope from the industrial channel.

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Data Sheet #: _____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Date: 2/20/03
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): JAW
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Community ID: _____
Transect ID: _____
Plot ID: SP-376

Remarks (Explain sample location, disturbances, problem areas):

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
*	Rubus discolor	S	25	FACW				
	Cirsium vulgare	H	5	FAC-				
	Stellaria media	H	5	FACW				
	Galium sp.	H	10					
*	Phalaris arundinacea	H	20	FACW				
*	Agrostis capillaris	H	80	FAC				
	Taraxacum officinale	H		FACW				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 66 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gage
- _____ Aerial Photograph
- _____ Other
- _____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: > 18 (in.)
Depth to Saturated Soil: > 18 (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

lacks wetland hydrology indicators

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-18	A	10YR 3/2	10YR 4/6		loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

soil has low chroma matrix w/ mottles

WETLAND DETERMINATION

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

Remarks: Sample plot 3 is located in a lawn dominated by non-native grass species between 2 ocean roads.

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Data Sheet #:_____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Applicant/Owner: Bureau of Reclamation
Investigator(s): JAW

Date: 2/20/03
County: Clallam
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Remarks (Explain sample location, disturbances, problem areas):

Community ID: _____
Transect ID: _____
Plot ID: SP-4 T7

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
*	Veronica americana	H	50	OBL				
*	Myosotis laxa c.f.	H	20	OBL				
*	Agrostis exarata c.f.	H	40	FACW				
*	Poa. sp.	H	40	?				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 66 - 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____Stream, Lake, or Tide Gage
_____Aerial Photograph
_____Other
_____No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: 10 (in.)
Depth to Saturated Soil: 0 (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
_____Inundated
_____Saturated in Upper 12 inches
_____Water Marks
_____Drift Lines
_____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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

Soil is saturated to surface. plot is 5" from standing water of overflow channel

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-11	A	10YR4/1	–	–	silty clay

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

rock refusal at 11 inches

WETLAND DETERMINATION

			Is this Sampling Point Within a Wetland?	
Hydrophytic Vegetation Present?	Yes	No		
Hydric Soils Present?	Yes	No		
Wetland Hydrology Present?	Yes	No	Yes	No

Remarks:

Sample plot 4 is located adjacent to an overflow channel. The channel supports herbaceous wetland vegetation, which was submerged at the time of the site visit

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Data Sheet #: _____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Date: 2/20/03
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): JAW
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Remarks (Explain sample location, disturbances, problem areas):

Community ID: _____
Transect ID: _____
Plot ID: SP-378

VEGETATION (x each dominant species)

Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
* Rubus ursinus	S	20	FACU				
Polypodium glycyrrhiza	H	10	—				
* Pseudotsuga menziesii	S	25	FACU				
Digitalis purpurea	H	T	FACU				
Holcus lanatus	H	15	FAC				
Thuja plicata	T	10	FAC				
(moss)	—	100	—				
(lichen)	—	100	—				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is not dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gage
- _____ Aerial Photograph
- _____ Other
- _____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: >12 (in.)
Depth to Saturated Soil: >12 (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

lacks wetland hydrology indicators

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-12	A	7.5 YR 2.5/1	—	—	Very rocky

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

rock refusal at 12 inches. Large cobbles present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)	**Is this Sampling Point Within a Wetland?**
Hydric Soils Present?	(Yes)	No	
Wetland Hydrology Present?	Yes	(No)	Yes (No)

Remarks:

Sample pit 5 is located south of the southern overflow channel in an upland.

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Data Sheet #:_____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Date: 2/20/03
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): JAW
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Community ID: _____
Transect ID: _____
Plot ID: SP-679

Remarks (Explain sample location, disturbances, problem areas):

VEGETATION (x each dominant species)

Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
* Rubus discolor	S	40	FACU				
Cytisus scoparius	S	5	—				
* Agrostis sp.	H	60	FAC				
Alnus rubra	S	15	FAC				
Pseudotsuga menziesii	S	5	FACU				
Plantago lanceolata	H	5	FACUH				
Geranium molle	H	T	—				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 50 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is not dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____Stream, Lake, or Tide Gage
_____Aerial Photograph
_____Other
_____No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: > 18 (in.)
Depth to Saturated Soil: > 18 (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
_____Inundated
_____Saturated in Upper 12 inches
_____Water Marks
_____Drift Lines
_____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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

no wetland hydrology indicators are present

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-18	A	7.5 YR 3/2	—	—	Very rocky, cobbly

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

rock refusal at 8 inches

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)
Hydric Soils Present?	Yes	(No)
Wetland Hydrology Present?	Yes	(No)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks: Sample plot 6 is located in an upland between an Elwha side channel and the driveway that leads to the emergency generator.

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Data Sheet #: _____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Date: 2/28/03
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): GJM, JAW
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Remarks (Explain sample location, disturbances, problem areas):

Community ID: _____
Transect ID: _____
Plot ID: SP-780

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
*	Holcus lanatus	H	20	FAC	Cirsium vulgare	H	T	FACU
	Phalaris arundinacea	H	10	FACW				
*	Trifolium	H	50					
	Plantago lanceolata	H	5	FACU+				
	Cardamine oligosperma	H	10	FAC				
	Hypochaeris radicata	H	2	FACU				
*	Festuca rubra	H	30	FAC+				
	Cirsium arvense	H	T	FAC-				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 66-100 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gage
- _____ Aerial Photograph
- _____ Other
- _____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: >18 (in.)
Depth to Saturated Soil: >18 (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ 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)

Remarks (As relevant, describe recent precipitation; hydrological modifications, local variations, etc.):

no wetland hydrology indicators present.

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-18	A	10YR3/1	—	—	silt loam
		10YR3/2			

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

soil matrix color varies between Chroma 1 and 2. No soil horizonation

WETLAND DETERMINATION

			Is this Sampling Point Within a Wetland?	
Hydrophytic Vegetation Present?	Yes	No		
Hydric Soils Present?	Yes	No		
Wetland Hydrology Present?	Yes	No	Yes	No

Remarks:

SP-7 is in a moist upland. It is ~~surrounded on the~~ a peninsula surrounded by out flow channel + pond. Wetlands are present on edge of channels, but do not extend to this upland.

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Data Sheet #: _____

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Water Treatment Plant
Date: 2/28/03
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): GTM, JAW
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Remarks (Explain sample location, disturbances, problem areas):

Community ID: _____
Transect ID: _____
Plot ID: SP-81

VEGETATION (x each dominant species)

Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
* Phalaris arundinacea	H	100	FACW				
Cirsium arvense	H	3	FAC-				
Urtica dioica	H	1	FAC+				
Rubus ursinus	S(V)	5	FACU				
* Alnus rubra	T	20	FAC				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):
Hydrophytic species dominate the plot vegetation.

HYDROLOGY

Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gage
- _____ Aerial Photograph
- _____ Other
- _____ No Recorded Data Available

Field Observations:
Depth of Surface Water: ~~>1~~ (in.)
Depth to Free Water in Pit: >18 (in.)
Depth to Saturated Soil: _____ (in.)

Is it the growing season? Yes (No)
Based on: SCS manual

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ Sediment Deposits
- X 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):
Sample plot is within the fringe wetland associated with the stream. Wetland hydrology caused by ground water + flooding associated with the stream.

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): " "

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-18	A	10YR 3/2	–	–	silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

Hydric soil indicators are present. Soil was likely ~~deposited~~ formed in alluvial deposits.

WETLAND DETERMINATION

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

Remarks:

Wetland consists of fringe area associated with low-lying banks of the stream and a blind channel ~~near~~ still water area.

rev.8/25/00

Data Sheet #: 1

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Surface Water Intake
Applicant/Owner: Bureau of Reclamation
Investigator(s): J. Walker, B. Kidder

Date: 6-14-04
County: Clallam
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Remarks (Explain sample location, disturbances, problem areas):

Community ID:
Transect ID:
Plot ID: SP-1&2

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
X	Glyceria elata	H	30	FACW+	Salix	S	2	
	Holcus lanatus	H	15	FAC	Bromus pacificus	H	5	—
X	Ranunculus repens	H	20	FACW	Poa	H	15	FAC
	Veronica americana	H	10	OBL	Lolium perenne	H	2	FAC
	Acer macrophyllum (seedlings)	S	10	FACU				
	Epilobium ciliatum	H	5	FACW-				
	Lapsana communis	H	2	—				
	Lactuca muralis	H	5	—				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):
Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gage
_____ Aerial Photograph
_____ Other
_____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: 12 (in.)
Depth to Saturated Soil: 2 (in.)

Is it the growing season? (Yes) No
Based on: SCS survey

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
_____ Inundated
X Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):
Saturation present during field investigation. Area appears to drain to adjacent pond on private property.

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: somewhat excessively drained

Taxonomy (Subgroup): Typic Xerofluvents

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0 - 7	A	10YR 3/1	—	—	clay loam
7 - 13	B	10YR 3/1	7.5YR 5/8	common fine	loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

- Soil appears disturbed - 1/4" branches found @ 6" depth
- lots of gravel in soil profile

WETLAND DETERMINATION

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

Remarks:

SP-1 is located in Wetland 6, which is located adjacent to a road + at the base of a slope. The vegetation is diverse with high representation of non-native species.

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Data Sheet #: 2

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Surface Water Intake
Applicant/Owner: Bureau of Reclamation
Investigator(s): Jeff Walker Bill Kidder

Date: 14 June 2004
County: Clallam
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes No
Is the area a potential Problem Area? Yes No

Community ID:
Transect ID:
Plot ID: SP-283

Remarks (Explain sample location, disturbances, problem areas):

Elwha River floodplain plot in cobbles.

VEGETATION (x each dominant species)

Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
Smilacina racemosa	E	15	FAC-	Berberis nervosa	S	T	—
Oemleria cerasiformis	S	T	FACU	Rubus ursinus	S	T	FACU
Symphoricarpos albus	S	10	FACU	Abies grandis	T	T	FACU-
Bromus sp.	E	T	—	Trientalis latifolia	E	T	FAC-
Pseudotsuga menziesii	T	T	FACU	Rubus parviflorus	S	T	FAC-
X Thuja plicata	T	30	FAC	Populus balsamifera	T	25	FAC X
Acer macrophyllum	T	15	FACU	Acer circinatum	T	5	FAC-
Tsuga heterophylla	T	T	FACU+				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is dominated by hydrophytic species. However, these are tree species - all understory species are non-hydrophytic.

HYDROLOGY

Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gage
- _____ Aerial Photograph
- _____ Other
- _____ No Recorded Data Available

Field Observations:
Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: N/A (in.)
Depth to Saturated Soil: N/A (in.)

Is it the growing season? (Yes) No
Based on: SCS survey

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): Typic Xerofluvents

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-10	A	10YR 4/2	–	–	sandy loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

very rocky

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)	**Is this Sampling Point Within a Wetland?**
Hydric Soils Present?	Yes	(No)	
Wetland Hydrology Present?	Yes	(No)	Yes (No)

Remarks:

SP-2 is in the upland riparian floodplain of the Elkhorn River

rev.8/25/00

Data Sheet #: 3

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Surface Water Intake
Date: 6-14-04
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): J. Walker, B. Kidder
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes No
Remarks (Explain sample location, disturbances, problem areas):

Community ID:
Transect ID:
Plot ID: SP-3 ~~87~~

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
X	Alnus rubra	T	40	FAC	Cornus sericea	S	5	FACW
X	Rosa nutkana	S	20	FAC-	Rubus spectabilis	S	5	FAC+
X	Populus balsamifera	T	20	FAC				
X	Ranunculus repens	H	30	FACW				
X	Carex donnana	H	40	OBL				
	Phalaris arundinacea	H	5	FACW				
	Poa sp.	H	10	FAC				
	Alopecurus geniculatus	H	15	OBL				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-). 80 %
Include species noted (*) as showing morphological adaptations to wetlands.
Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gage
_____ Aerial Photograph
_____ Other
_____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: — (in.)
Depth to Saturated Soil: ~12 (in.)

Is it the growing season? (Yes) No
Based on: SCS survey

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

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

SP-3 is approximately 15 feet from the bank of the Elwha

SOILS

Map Unit Name: Typic Xerofluvents

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): Typic Xerofluvents

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-6	A	10YR 4/1	—	—	Clay
6-15	B	10YR 3/1	7.5YR 5/6	→ oxidized rhizosphere	Clay w/ fine gravel

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

WETLAND DETERMINATION

			Is this Sampling Point Within a Wetland?	
Hydrophytic Vegetation Present?	Yes	No		
Hydric Soils Present?	Yes	No		
Wetland Hydrology Present?	Yes	No	Yes	No

Remarks: SP-3 is at the edge of Wetland I. Wetland I is adjacent to the Elwha River and has emergent & scrub-shrub portions. This wetland has a road through it. The road does not contain any vegetation, but did have standing water across it at the time of the site visit.

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Data Sheet #: 4

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Surface Water Intake
Applicant/Owner: Bureau of Reclamation
Investigator(s): Jeff Walker, Bill Ridder

Date: 15 June 2004
County: Clallam
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? (Yes) No

Community ID:
Transect ID:
Plot ID: SP-~~4~~ 85

Remarks (Explain sample location, disturbances, problem areas):

gravel bar middle of river

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
	Clematis vitalba	S	5	—				
	Rubus spectabilis	S	5	FACU				
	Pseudotsuga menziesii	E	T	FACU				
X	Alnus rubra	S	45	FAC				
	Acer macrophyllum	S	5	FACU				
X	Salix sitchensis	S	20	FACW				
	Ribes bracteosum	S	T	FAC				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Douglas Firs are seedlings ; vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____Stream, Lake, or Tide Gage
_____Aerial Photograph
_____Other
_____No Recorded Data Available

Field Observations:
Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: N/A (in.)
Depth to Saturated Soil: N/A (in.)

Is it the growing season? (Yes) No
Based on: SCS Survey

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
_____Inundated
_____Saturated in Upper 12 inches
_____Water Marks
_____Drift Lines
_____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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

excessively drained; no wetland hydrology indicators present

SOILS

Map Unit Name: (not mapped in soil survey since it's in the Elwha River)

Drainage Class:

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-10	A	7.5 YR 2.5/2	—	—	loamy sand

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regime
- _____ Reducing Conditions
- _____ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer
- _____ Organic Streaking
- _____ Listed on Local Hydric Soils List
- _____ Listed on State Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

soils forming by alluvial action
small to large cobbles dominate soil profile

WETLAND DETERMINATION

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

Is this Sampling Point Within a Wetland? Yes No

Remarks:

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Data Sheet #: 5

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Surface Water Intake
Applicant/Owner: Bureau of Reclamation
Investigator(s): Jeff Walker, Bill Kidder

Date: 15 June 2004
County: Clallam
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? (Yes) No

Community ID:
Transect ID:
Plot ID: SP-8 96

Remarks (Explain sample location, disturbances, problem areas):

gravel bar middle of river

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
X	Ranunculus repens	E	30	FACW	Acer macrophyllum	S	5	FACU
X	Alnus rubra	S	25	FAC	Rubus spectabilus	S	T	FAC+
	Lonicera involucrata	S		FAC+	Rubus parviflorus	S	T	FAC-
	Poa sp	E		-				
	Bromus sp	E		-				
X	Salix sitchensis	S	20	FACW				
	Symphoracarpus albus	S	T	FACU				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):

Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gage
- _____ Aerial Photograph
- _____ Other
- _____ No Recorded Data Available

Field Observations:
Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: 12 (in.)
Depth to Saturated Soil: 9 (in.)

Is it the growing season? (Yes) No
Based on: SCS Survey

Wetland Hydrology Indicators (Describe in Remarks):

Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):

sample plot next to river

SOILS

Map Unit Name: Not mapped in soil survey since it is in the Elwha River

Drainage Class:

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-8	A	7.5YR 2.5/1	—	—	clay loam
8-12	B	10 YR 3/1	—	—	loamy sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

8-12 inches frequent small + medium cobbles

0-8 few rocks some gravel

WETLAND DETERMINATION

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

Remarks:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 25 Aug 2005
Site Location: Private Residence RM 8.3
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): WTK
Transect/Plot: SP-87 Site Location: swale north of private residence at RM 8.3; about 150 ft b/t break in trees

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ in swale about 20 ft wide by 60 ft long

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Populus balsamifera	FAC	10	Herbs	Plantago lanceolata	FACU+	15
	Thuja plicata	FAC-	5		Agrostis	FAC	90 ✓
					Dactylis glomerata	FACU	20 ✓
					Holcus lanatus	FAC	5
					Phleum pratense	FAC-	<10
*Shrubs	Alnus rubra	FAC	5				
✓	Populus balsamifera	FAC	75				
	Ribes divaricatum	FAC	T				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 66 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐ * = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Taxonomy: Drainage Class:
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-8	10YR 4/2	5YR5/8 fine to medium common distinct	silt loam blocky
B	8-16	10YR 3/1	—	loamy sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Resident described ponding or flowing water here previously

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PSS/Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 25 August 2005
Site Location: Private Residence RM 8.15
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): WTK
Transect/Plot: SP-88 Site Location: 8 ft uphill and 25 feet SE of SP-1

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☒ couple feet cut off SE edg b/c in swale

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Dactylis glomerata	FAC-	50 ✓
					Agrostis gigantea	FAC	70 ✓
					Holcus lanatus	FAC	5
					Elytrigia repens	FAC-	25 ✓
* Shrubs	Rubus ursinus	FACU	10				
	Alnus rubra	FAC	<5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 33 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒ * = also includes saplings (woody plants <20 ft tall)

Comments: west edge of plot cut short as it extends into bottom of swale within wetland

Soil

Mapped Series: Typic Xerofluvent Taxonomy: Typic Xerofluvent Drainage Class: Somewhat excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion: Yes

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-9	10YR3/2	—	sandy loam blocky
B	9-16	10YR3/1	—	loamy sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: sloping elevation drains water toward SP-1

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: upland

Comments: this area slopes west toward swale 3-5% slope

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 25 August 2005
Site Location: Private Residence RM 8.15
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): WTK
Transect/Plot: SP-89 Site Location: south of house about 75 feet bottom of swale

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Agrostis gigantea	FAC	60 ✓
					Holcus lanatus	FAC	20 ✓
					Elytrigia repens	FAC-	20 ✓
					Plantago major	FAC	10
					Ranunculus repens	FACW	15
Shrubs					Trifolium pratense	FACU	25 ✓

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐ * = also includes saplings (woody plants <20 ft tall)

Comments: Much more Holcus present just outside plot

Soil

Mapped Series: Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes ☐ No ☒ Confirmed map soil type or inclusion: Yes

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-13	10YR 3/2	7.5YR 5/8 faint, small/med, common	very fine sandy loam
B	13-16	10YR 3/1	—	loamy sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:		Secondary Hydrology Indicators:	
☐ Inundated	☐ Drift lines	☐ Oxidized Root Channels within 12" bgs	☐ FAC- neutral test
☐ Saturated within 12" bgs	☐ Sediment deposits	☐ Local soil survey	☐ Water-stained leaves
☐ Wetland drainage pattern	☐ Water marks	☐ Other:	

Is the hydrology criterion met? Yes ☒ No ☐

Comments: swale depression likely captures surface runoff, no distinct outlet

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM / Depressional

Comments: swale wetland distinguished by topographic break, and vegetation community subtle shifts

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Fieldwork Date: 25 August 2005
Site Location: Private Residence RM 8.15
County: Clallam State: WA
Applicant/Owner: Bureau of Reclamation
Investigator(s): WTK
Transect/Plot: SP-9D Site Location: SE of house 100 ft on hill draining to swale

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Holcus lanatus	FAC	75 ✓
					Trifolium pratense	FACU	25 ✓
					Hypochaeris radicata	FACU	10
					Agrostis sp	FAC	25 ✓
					Dactylis glomerata	FAC+	5
* Shrubs	Polygonum cuspidatum	FACU	<5		Pteridium aquilinum	FACU	T

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 66 ✓ = dominant species
Is the hydrophytic vegetation criteria met? Yes [X] No [ ] * = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Typic Xerofluvents Taxonomy: Typic Xerofluvents Drainage Class: Somewhat Excessive
On Hydric Soils List? Yes [ ] No [X] Confirmed map soil type or inclusion: Yes

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-17	10YR 3/2	—	very fine sandy loam med crumbly

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [ ] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [ ] No [X]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: N/A Depth to Saturation: N/A Depth to Free Water: N/A

Primary Hydrology Indicators:
- [ ] Inundated
- [ ] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [X]

Comments: 5-10% slope down to swale several feet away. Water drains to lower depression

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-90A Site Location:
Fieldwork Date: February 2, 2006
County: Clallam State: WA
Investigator(s): J. Walker, N. Herlocker

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Festuca arundinacea	FAC-	30 ✓
					Agrostis stolonifera	FAC	60 ✓
					Ranunculus repens	FACW	5
					Holcus lanatus	FAC	5
					Pteridium aquilinum	FACU	5
* Shrubs	Rubus ursinus	FACU	10				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50 %
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-16	10YR 3/2	—	silt loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments: contains sand and gravel fill material

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☐ No ☒
Depth of Inundation: 0.5' Depth to Saturation: 0 Depth to Free Water: 0

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: ground is inundated, but this year is 13" above normal rainfall

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: There appears to be a wetland just west of our study area. It's a small isolated depression in a pasture w/ Agrostis + Ranunculus repens. It has up to 6" of standing H2O.

rev.8/25/00

Data Sheet #: 7

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Heights Water Pipeline
Date: 6-15-04
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): Jeff Walker, Bill Kidder
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Remarks (Explain sample location, disturbances, problem areas):

Community ID:
Transect ID:
Plot ID: ~~SP-7~~ SP-91

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
X	Ranunculus repens	H	80	FACW				
X	Rosa nutkana	S	50	FAC-				
X	Holcus lanatus	H	20	FAC				
	Poa sp	H	10	—				
	Alnus rubra	T	15	FAC				

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-). 66 %
Include species noted (*) as showing morphological adaptations to wetlands.
Remarks (Describe relevant local variations, seasonal effects, etc):
Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gage
_____ Aerial Photograph
_____ Other
_____ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: — (in.)
Depth to Saturated Soil: 7/2 (in.)

Is it the growing season? (Yes) No
Based on: SCS survey

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):
Soil is moist, but not saturated. This area is in a depression and appears to collect moisture from surrounding areas. The soil is most likely saturated to the surface earlier in the growing season

SOILS

Map Unit Name: Clallam gravelly sandy loam

Drainage Class: moderately well drained

Taxonomy (Subgroup): Dystric Xerochrepts

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-6	A_1	10YR 3/2	7.5YR 5/8	fine, few	clay loam
6-12	A_2	2.5Y 3/2	7.5YR 4/6	frequent, common	sandy clay loam
12-15	B	10YR 3/4	10YR 5/8	common, fine to medium	sandy loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

WETLAND DETERMINATION

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

Remarks:

SP-91 is located in Wetland E1H-1, which is west of Rife Road. Wetland K is dominated by Rosa nutkana and Phalaris arundinacea. Cornus sericea, Alnus rubra, Ranunculus repens, and Poa also present. The wetland is in a depression. SP-7 is at the edge of the wetland on the southeastern corner. Wetland K appears to be composed mostly of a PSS community.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-92 Site Location:
Fieldwork Date: February 2, 2006
County: Clallam State: WA
Investigator(s): J. Walker, N. Herlocker

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	5	Herbs	Agrostis stolonifera	FAC	100 ✓
					Trifolium repens	FAC-	20 ✓
					Plantago lanceolata	FACU	2
					Hypochaeris radicata	FACU	2
					Rumex acetosella	FACU	2
* Shrubs	Rubus ursinus	FACU	5		Parentucellia viscosa		2

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Upland vegetation is beginning to sprout + will likely become dominant

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:
Drainage Class: moderately well drained

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-3	10YR 3/2	—	Sandy gravelly fill
B	3-16	10YR 4/3	—	sandy w/ gravels

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☒

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☐ No ☒
Depth of Inundation: 0-2" Depth to Saturation: 0 Depth to Free Water: H2O perched on compacted fill material

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: ground is inundated, but this year is 13" above normal rainfall

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

rev.8/25/00

Data Sheet #: 9

WETLAND DETERMINATION
(Modified from: 1987 COE Wetlands Delineation Manual)

Project/Site: Elwha Heights Water Pipeline
Date: 15 June 2004
Applicant/Owner: Bureau of Reclamation
County: Clallam
Investigator(s): Jeff Walker, Bill Kidder
State: WA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
Remarks (Explain sample location, disturbances, problem areas):

Community ID: W/L L
Transect ID:
Plot ID: SP-93

roadside ditch south side of Walker Ranch Rd

VEGETATION (x each dominant species)

	Plant Species	Stratum	% Cover	Indicator	Plant Species	Stratum	% Cover	Indicator
IN X	Phalaris arundinacea	E	30	FACW	rooted in ditch			
IN X	Ranunculus repens	E	75	FACW				
OUT	Rosa nutkana	S		FAC-				
OUT	Sambucus racemosa	S		FAC	not rooted in ditch			
OUT	Salix sp.				but growing over it.			

Percent of Dominant Species that are OBL, FACW or FAC (except FAC-).
Include species noted (*) as showing morphological adaptations to wetlands. 100 %

Remarks (Describe relevant local variations, seasonal effects, etc):
vegetation sampled linearly along ditch bottom; Vegetation is dominated by hydrophytic species

HYDROLOGY

Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gage
_____ Aerial Photograph
_____ Other
_____ No Recorded Data Available

Field Observations:
Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: N/A (in.)
Depth to Saturated Soil: 12 (in.)

Is it the growing season? (Yes) No
Based on: SCS survey

Wetland Hydrology Indicators (Describe in Remarks):
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ 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)

Remarks (As relevant, describe recent precipitation, hydrological modifications, local variations, etc.):
time of year and lack of significant recent rainfall indicate that soils saturated now probably are more saturated/inundated in April when rains typically occur

SOILS

Map Unit Name: Clallam gravelly sandy loam

Drainage Class: moderately well drained

Taxonomy (Subgroup): Dystric Xerochrepts

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Moisture etc.
0-6	A	2.5Y3/1	–	–	silty clay loam
6-18	B	10YR3/2	10YR3/6	Medium/common	gravelly loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer
- ____ Organic Streaking
- ____ Listed on Local Hydric Soils List
- ____ Listed on State Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: (Describe soils disturbances, local variations, history etc.):

bottom of ditch

WETLAND DETERMINATION

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

Remarks:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-94 Site Location: EH-3
Fieldwork Date: February 2, 2006
County: Clallam State: WA
Investigator(s): J. Walker, N. Herlocker

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Juncus effusus	FACW	20 ✓
					Festuca arundinacea	FAC-	40 ✓
					Agrostis capillaris	FAC	10
					Holcus lanatus	FAC	40 ✓
*Shrubs	Salix sitchensis	FACW	10				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 66
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-8	10YR 3/2	10YR 4/6 few, distinct, fine	silty clay loam
B	8+	10YR 5/1	10YR 4/6 common, distinct, med	sandy loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☐ No ☒
Depth of Inundation: 0.5" Depth to Saturation: 0 Depth to Free Water: 0

Primary Hydrology Indicators:		Secondary Hydrology Indicators:	
☐ Inundated	☐ Drift lines	☐ Oxidized Root Channels within 12" bgs	☐ FAC- neutral test
☒ Saturated within 12" bgs	☐ Sediment deposits	☐ Local soil survey	☐ Water-stained leaves
☐ Wetland drainage pattern	☐ Water marks	☐ Other:	

Is the hydrology criterion met? Yes ☐ No ☐

Comments: water perched 2-3" in surface layer

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: Depressional / PEM

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-95 Site Location:
Fieldwork Date: February 2, 2006
County: Clallam State: WA
Investigator(s): J. Walker, N. Herlocker

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☐ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Festuca arundinacea	FAC-	20 ✓
					Agrostis stolonifera	FAC	40 ✓
					Holcus lanatus	FAC	40 ✓
Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 66%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐
✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-10	10YR 4/3	10YR 3/6 few, faint, fines	Sandy loam
B	10-16	10YR 5/1	10YR 3/6 common, distinct, med.	Silty Sand

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☐ No ☒
Depth of Inundation: N/A Depth to Saturation: > 16" Depth to Free Water: >16"

Primary Hydrology Indicators:		Secondary Hydrology Indicators:	
☐ Inundated	☐ Drift lines	☐ Oxidized Root Channels within 12" bgs	☐ FAC- neutral test
☐ Saturated within 12" bgs	☐ Sediment deposits	☐ Local soil survey	☐ Water-stained leaves
☐ Wetland drainage pattern	☐ Water marks	☐ Other:	

Is the hydrology criterion met? Yes ☐ No ☒

Comments: no saturation or inundation in extremely wet winter

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments: SP-95 is between wetland EH-3 and the road.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-96 Site Location: EH-5
Fieldwork Date: 2/2/06
County: Clallam State: WA
Investigator(s): J. Walker, A. Hardacker

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	none w/in 30'			Herbs	Ranunculus repens	FACW	40 ✓
					Holcus lanatus	FAC+	35 ✓
					Dactylis glomerata		25 ✓
* Shrubs	" "						

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-7"	10YR 3/2	none	Sandy clay loam, granular
B	7-15"	10YR 5/2	7.5YR 5/6 comm. prom. med.	Sandy loam, granular

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☒ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☒ No ☐

Comments:

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: 0 Depth to Saturation: surface Depth to Free Water: 10"

Primary Hydrology Indicators:
☐ Inundated
☒ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☒ No ☐

Comments: Water perched on top. Ponds during wet season with poor drainage. Compaction due to traffic.

Determination

Wetland? Yes ☒ No ☐
Cowardin Class/ HGM Class: PEM, Depressional

Comments: At intersection of 2 forest roads.

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-97 Site Location: Wetland EH-4
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	40 ✓
					Festuca arundinacea	FAC-	20 ✓
					Agrostis sp.	FAC	20 ✓
*Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 66 %
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-10	10YR 4/2	—	Sandy clay loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [ ] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: lots of gravel in profile

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: 0.5" Depth to Saturation: 0 Depth to Free Water: 0

Primary Hydrology Indicators:
- [X] Inundated
- [X] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM / Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-93 Site Location: Upland
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Festuca arundinacea	FAC-	50 ✓
					Agrostis stolonifera	FAC	50 ✓
Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 58%
Is the hydrophytic vegetation criteria met? Yes [ ] No [X]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is not dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-14	10YR 3/3	—	clay loam
B	14+	10YR 4/4	7.5 YR 4/6 common, medium	clay loam

[ ] Histosol/Histic epipedon
[ ] Sulfidic odor
[ ] Concretions within 3" bgs
[ ] Low matrix chroma and redox. within 10" bgs
[ ] Gleyed within 10" bgs
[ ] On Hydric Soils List and matches profile
[ ] Reducing conditions
[ ] Aquic moisture regime
[ ] Sandy soils - High organic content in surface horizon
[ ] Sandy soils - Organic streaking or pan
[ ] Other:

Is the hydric soil criterion met? Yes [ ] No [X]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: 12" Depth to Free Water: 14"

Primary Hydrology Indicators:
[ ] Inundated
[ ] Saturated within 12" bgs
[ ] Wetland drainage pattern
[ ] Drift lines
[ ] Sediment deposits
[ ] Water marks

Secondary Hydrology Indicators:
[ ] Oxidized Root Channels within 12" bgs
[ ] Local soil survey
[ ] Other:
[ ] FAC- neutral test
[ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [X]

Comments:

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-99 Site Location: Upland
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Alnus rubra	FAC	60✓	Herbs	Polystichum munitum	FACU	10
Shrubs	Rubus ursinus	FACU	5				
	Rubus spectabilis	FAC+	10				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-9	10YR 4/2	—	loam
B	9-16	10YR 4/3	7.5YR 4/6 common, med, distinct	clay loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [ ] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [ ] No [X]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: 14" Depth to Free Water: 15"

Primary Hydrology Indicators:		Secondary Hydrology Indicators:	
[ ] Inundated	[ ] Drift lines	[ ] Oxidized Root Channels within 12" bgs	[ ] FAC- neutral test
[ ] Saturated within 12" bgs	[ ] Sediment deposits	[ ] Local soil survey	[ ] Water-stained leaves
[ ] Wetland drainage pattern	[ ] Water marks	[ ] Other:	

Is the hydrology criterion met? Yes [ ] No [ ]

Comments:

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class: Upland

Comments: next to dirt road, close to wetland EH-5

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-100 Site Location: EH-6
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	40 ✓
					Holcus lanatus	FAC	20 ✓
					Agrostis stolonifera	FAC	40 ✓
* Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-9	10YR 4/2	10 YR 3/6 common, faint, med.	clay loam
B	9+	10YR 4/3	10 YR 4/6 common, distinct, med.	sandy clay loam

[ ] Histosol/Histic epipedon
[ ] Sulfidic odor
[ ] Concretions within 3" bgs
[X] Low matrix chroma and redox. within 10" bgs
[ ] Gleyed within 10" bgs
[ ] On Hydric Soils List and matches profile
[ ] Reducing conditions
[ ] Aquic moisture regime
[ ] Sandy soils - High organic content in surface horizon
[ ] Sandy soils - Organic streaking or pan
[ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments: rock refusal at 10'

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: 0 Depth to Free Water: 4"

Primary Hydrology Indicators:
[ ] Inundated
[X] Saturated within 12" bgs
[ ] Wetland drainage pattern
[ ] Drift lines
[ ] Sediment deposits
[ ] Water marks

Secondary Hydrology Indicators:
[ ] Oxidized Root Channels within 12" bgs
[ ] Local soil survey
[ ] Other:
[ ] FAC- neutral test
[ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM/PSS + Depressional

Comments: EH-6 lies on either side of dirt road. PSS community is on outside, PEM community is on west side

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-101 Site Location: Upland
Fieldwork Date: February 23, 2016
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Pseudotsuga menziesii	FACU	50	Herbs	Agrostis stolonifera	FAC	5
	Thuja plicata	FAC	50				
Shrubs							

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50%
Is the hydrophytic vegetation criteria met? Yes ☐ No ☒

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is not dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts
Drainage Class: moderately well drained
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-14	10YR 4/3	7.5YR 3/4 common, med., faint → distinct	silty clay loam
B	14+	10YR 4/4	" "	

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☐

Comments: rock refusal @ 14"

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☒ No ☐
Depth of Inundation: — Depth to Saturation: 14" Depth to Free Water: >14"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☒

Comments: No wetland hydrology indicators are present

Determination

Wetland? Yes ☐ No ☒
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-102 Site Location: EH-7
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Ranunculus repens	FACW	20 ✓
					Carex densa	OBL	15
					Agrostis stolonifera	FAC	80 ✓
					Holcus lanatus	FAC	10
*Shrubs	Spiraea douglasii	FACW	5				
	Thuja plicata	FAC	15				
	Rosa nutkana	FAC	5				
	Rubus ursinus	FACU	2				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments:

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts
Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-14	10YR 4/2	10YR 4/6 few, fine, distinct	silty clay loam
B	14-18	10YR 5/2	10YR 5/6 many, med, distinct	loam

[ ] Histosol/Histic epipedon
[ ] Sulfidic odor
[ ] Concretions within 3" bgs
[X] Low matrix chroma and redox. within 10" bgs
[ ] Gleyed within 10" bgs
[ ] On Hydric Soils List and matches profile
[ ] Reducing conditions
[ ] Aquic moisture regime
[ ] Sandy soils - High organic content in surface horizon
[ ] Sandy soils - Organic streaking or pan
[ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: 0 Depth to Free Water: 7"

Primary Hydrology Indicators:
[ ] Inundated
[X] Saturated within 12" bgs
[ ] Wetland drainage pattern
[ ] Drift lines
[ ] Sediment deposits
[ ] Water marks

Secondary Hydrology Indicators:
[ ] Oxidized Root Channels within 12" bgs
[ ] Local soil survey
[ ] Other:
[ ] FAC- neutral test
[ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments: Saturated down to 14", drier below 14".

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM w/ small PSS / Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-103 Site Location:
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	Picea sitchensis	FAC	10	Herbs	Ranunculus repens	FACW	10
	Thuja plicata	FAC	10		Carex obnupta	OBL	20 ✓
	Alnus rubra	FAC	5		Holcus lanatus	FAC	80 ✓
Shrubs	Rubus spectabilis	FAC+	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-9	10 YR 3/2	—	clay loam
B	9-17	10 YR 3/2	7.5 YR 3/3 common, medium	loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [X] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: 0 Depth to Free Water: 9"

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PEM/PSS, Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-104 Site Location:
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	✓ Pseudotsuga menziesii	FACU	80	Herbs	Polystichum munitum	FACU.	2
	✓ Picea sitchensis	FAC	20		Dactylis glomerata	FACU	T
Shrubs	Gaultheria shallon	FACU	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 50%
Is the hydrophytic vegetation criteria met? Yes [ ] No [X]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is not dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:
Drainage Class: moderately well drained

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A_1	0-5	10YR 3/4	—	loam
A_2	5-13	10YR 3/4	—	loam
B	13-16	10YR 4/3	—	Sandy loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [ ] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [ ] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: >16" Depth to Free Water: —

Primary Hydrology Indicators:
- [ ] Inundated
- [ ] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [X]

Comments:

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-105 Site Location:
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [X] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Carex obnupta	OBL	20 ✓
					Ranunculus repens	FACW	10
✓ Shrubs	Spiraea douglasii	FACW	40				
	Alnus rubra	FAC	10				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 100%
Is the hydrophytic vegetation criteria met? Yes [X] No [ ]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts
Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoxmorphic Features	Texture, Other
A	0-13	10YR 2/2	—	clay loam
B	13-15	10YR 5/3	10YR 5/8 common, med.	clay loam

- [ ] Histosol/Histic epipedon
- [ ] Sulfidic odor
- [ ] Concretions within 3" bgs
- [ ] Low matrix chroma and redox. within 10" bgs
- [ ] Gleyed within 10" bgs
- [ ] On Hydric Soils List and matches profile
- [ ] Reducing conditions
- [ ] Aquic moisture regime
- [ ] Sandy soils - High organic content in surface horizon
- [ ] Sandy soils - Organic streaking or pan
- [ ] Other:

Is the hydric soil criterion met? Yes [X] No [ ]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: 0 Depth to Free Water: 7"

Primary Hydrology Indicators:
- [ ] Inundated
- [X] Saturated within 12" bgs
- [ ] Wetland drainage pattern
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Water marks

Secondary Hydrology Indicators:
- [ ] Oxidized Root Channels within 12" bgs
- [ ] Local soil survey
- [ ] Other:
- [ ] FAC- neutral test
- [ ] Water-stained leaves

Is the hydrology criterion met? Yes [X] No [ ]

Comments:

Determination

Wetland? Yes [X] No [ ]
Cowardin Class/ HGM Class: PSS / Depressional

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-104 Site Location:
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes [X] No [ ]
Significantly disturbed (atypical situation)? Yes [ ] No [X]
Is this a potential Problem Area? Yes [ ] No [X]

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes [ ] No [ ]

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees	✓ Pseudotsuga menziesii	FACU	100	Herbs	Prunella vulgaris	FACU+	10
					Dactylis glomerata	FACU	50 ✓
Shrubs	✓ Picea sitchensis	FAC	20				
	Rubus ursinus	FACU	5				
	Thuja plicata	FAC	5				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: ~~[illegible]~~ 33%
Is the hydrophytic vegetation criteria met? Yes [ ] No [X]

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is not dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts
Drainage Class: moderately well drained
On Hydric Soils List? Yes [ ] No [ ] Confirmed map soil type or inclusion:

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-12	10YR 3/2	—	loam
B	12-16	10YR 4/3	—	clay loam

[ ] Histosol/Histic epipedon
[ ] Sulfidic odor
[ ] Concretions within 3" bgs
[ ] Low matrix chroma and redox. within 10" bgs
[ ] Gleyed within 10" bgs
[ ] On Hydric Soils List and matches profile
[ ] Reducing conditions
[ ] Aquic moisture regime
[ ] Sandy soils - High organic content in surface horizon
[ ] Sandy soils - Organic streaking or pan
[ ] Other:

Is the hydric soil criterion met? Yes [ ] No [X]

Comments:

Hydrology

Recorded Data:
Recorded Data Available: [ ] Aerial Photos: [ ] Stream Gauge: [ ] Other: [ ]

Field Data: Growing Season? Yes [X] No [ ]
Depth of Inundation: — Depth to Saturation: >16" Depth to Free Water: >16"

Primary Hydrology Indicators:
[ ] Inundated
[ ] Saturated within 12" bgs
[ ] Wetland drainage pattern
[ ] Drift lines
[ ] Sediment deposits
[ ] Water marks

Secondary Hydrology Indicators:
[ ] Oxidized Root Channels within 12" bgs
[ ] Local soil survey
[ ] Other:
[ ] FAC- neutral test
[ ] Water-stained leaves

Is the hydrology criterion met? Yes [ ] No [ ]

Comments:

Determination

Wetland? Yes [ ] No [X]
Cowardin Class/ HGM Class: Upland

Comments:

URS Routine On-site Wetlands Determination

URS Seattle Office, 1501 4th Ave, Suite 1400, Seattle, Washington 98102 Tele: 206.438.2700

Project Name: Elwha River Restoration
Site Location: Elwha Heights Water Pipeline
Applicant/Owner: Bureau of Reclamation
Transect/Plot: SP-107 Site Location:
Fieldwork Date: February 23, 2006
County: Clallam State: WA
Investigator(s): J. Walker

Normal circumstances exist on site? Yes ☒ No ☐
Significantly disturbed (atypical situation)? Yes ☐ No ☒
Is this a potential Problem Area? Yes ☐ No ☒

Vegetation

Normal plot size/shape? (radius – trees & shrubs = 30', herbs = 5'/ circular) Yes ☒ No ☐

	Species	Ind. Status	% Raw Cover		Species	Ind. Status	% Raw Cover
Trees				Herbs	Oenanthe sarmentosa	OBL	40 ✓
					Ranunculus repens	FACW	20 ✓
					Urtica dioica	FACU	T
					Rumex obtusifolius	FACU	T
Shrubs	Rubus spectabilis	FACU	40				
	Rubus ursinus	FACU	5				
✓	Sambucus racemosa	FACU	20				

Percent of dominant plant species that are OBL, FACW, FAC+, & FAC: 66%
Is the hydrophytic vegetation criteria met? Yes ☒ No ☐

✓ = dominant species
* = also includes saplings (woody plants <20 ft tall)

Comments: Vegetation is dominated by hydrophytic species

Soil

Mapped Series: Clallam gravelly sandy loam Taxonomy: Dystric Xerochrepts
On Hydric Soils List? Yes ☐ No ☐ Confirmed map soil type or inclusion:
Drainage Class: moderately well drained

Horizon	Depth	Matrix Color	Redoximorphic Features	Texture, Other
A	0-6	7.5YR 3/1	—	much organic matter
B	6/7	7.5YR 4/2	7.5YR 4/6 faint	clay loam

☐ Histosol/Histic epipedon
☐ Sulfidic odor
☐ Concretions within 3" bgs
☐ Low matrix chroma and redox. within 10" bgs
☐ Gleyed within 10" bgs
☐ On Hydric Soils List and matches profile
☐ Reducing conditions
☐ Aquic moisture regime
☐ Sandy soils - High organic content in surface horizon
☐ Sandy soils - Organic streaking or pan
☐ Other:

Is the hydric soil criterion met? Yes ☐ No ☐

Comments: wood debris and organic matter

Hydrology

Recorded Data:
Recorded Data Available: ☐ Aerial Photos: ☐ Stream Gauge: ☐ Other: ☐

Field Data: Growing Season? Yes ☐ No ☐
Depth of Inundation: — Depth to Saturation: 12" Depth to Free Water: 15"

Primary Hydrology Indicators:
☐ Inundated
☐ Saturated within 12" bgs
☐ Wetland drainage pattern
☐ Drift lines
☐ Sediment deposits
☐ Water marks

Secondary Hydrology Indicators:
☐ Oxidized Root Channels within 12" bgs
☐ Local soil survey
☐ Other:
☐ FAC- neutral test
☐ Water-stained leaves

Is the hydrology criterion met? Yes ☐ No ☐

Comments:

Determination

Wetland? Yes ☐ No ☐
Cowardin Class/ HGM Class:

Comments:

APPENDIX B

WASHINGTON STATE DEPARTMENT OF ECOLOGY

WETLAND RATING DATA FORMS

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): WP-1

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/27/05

DRAFT 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	6
Score for Hydrologic Functions	3
Score for Habitat Functions	5
TOTAL score for functions	14

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: WP-1 **Date:** July 27, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

WP-1

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	0
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	3
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland X A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 2
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	6

D	Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	0
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	3
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	0
D	**Total for D 3** *Add the points in the boxes above*	3
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	3

WP-1

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

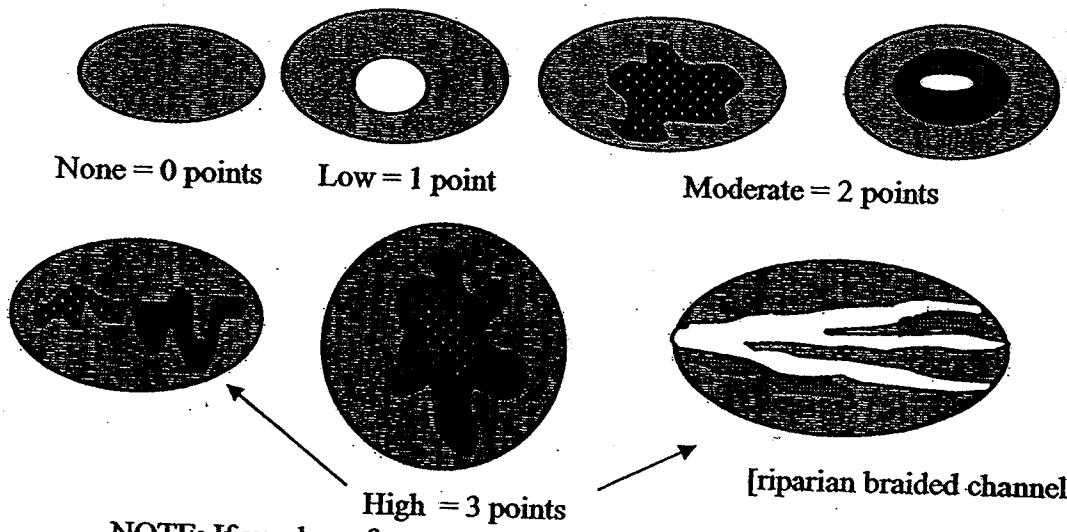
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

3

Comments

WP-1

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. ~~**Points = 2**~~

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

2

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**

0

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

WP-1

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	0
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	2
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	5

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): FL - A

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: N BH, WTK Affiliation: URS Corp Date of site visit: 25 July 2005

DRAFT 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	10
Score for Hydrologic Functions	11
Score for Habitat Functions	24
TOTAL score for functions	45

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	X
Bog		**Lake-fringe**	
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above	X		

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

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

Check List for Wetlands that Need Special Protection and that Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: FL-A **Date:** 25 July 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

FLA

R	**Riverine and Freshwater Tidal Depressional Wetlands**	**Points**
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	2
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	8
R	*Add the points in the boxes above*	10
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	10

Comments

R	**Riverine and Freshwater Tidal Fringe Wetlands**	**Points**
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the potential to reduce flooding and erosion? *(see p. 54)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	4
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	11
R	**R 4. Does the wetland have the opportunity to reduce flooding and erosion?** *(see p. 57)* Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe ~~along~~ the sides of a dike)* federal **YES** multiplier is **2** — **NO** multiplier is **1** — levee blocks flood waters	multiplier 1
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	11

Comments

FL-A

These questions apply to wetlands of all HGM classes. Points

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
_X_Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
_X_Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

4 types or more	points = 4
3 types	~~points = 2~~
2 types	~~points = 1~~
1 type	points = 0

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
_X_Occasionally flooded or inundated
____Saturated only
_X_Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

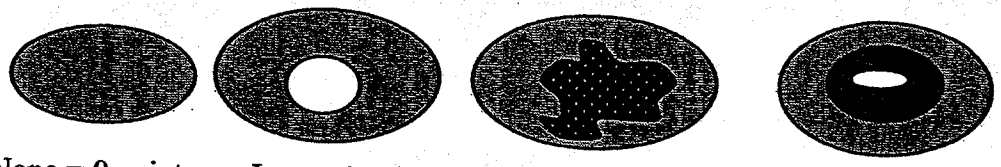
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

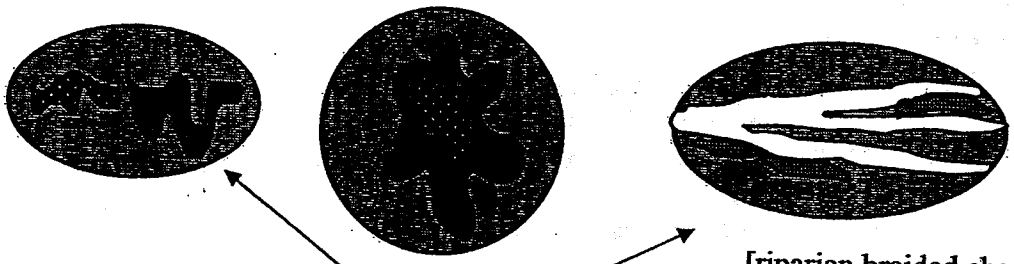
1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

1

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).

X 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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

3

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

7

Comments

FL-A

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

4

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**

4

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?
(see text for a more detailed description of these priority habitats)

_X_ **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.

_X_ **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 0.5% during the period of average annual low flow. Includes both estuaries and lagoons.

_X_ **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

4

FL-A

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	17
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	24

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): FL-B

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: NBH, WTK Affiliation: URS Date of site visit: 5/25/05

DRAFT 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	8
Score for Hydrologic Functions	8
Score for Habitat Functions	14
TOTAL score for functions	30

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply___

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: FL-B **Date:** 25 July 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

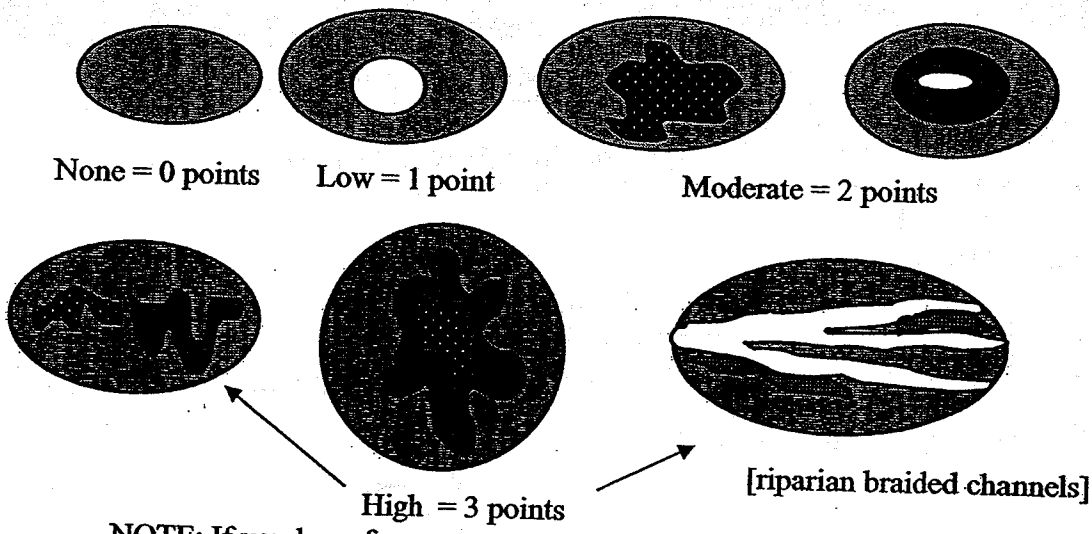
FC-B

D	Depressional and Flats Wetlands	Units
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet points = 3 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland has an unconstricted surface outlet points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	8

	D1. Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	1
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	8
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	8

FL-B

These questions apply to wetland polygons classified as HGM Classes	Score
HABITAT FUNCTIONS - Indicators that wetland functions to provide habitat for many species	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> ***(see p. 72)*** *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed _X_Emergent plants _X_Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) ____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	1
H 1.2. <u>Hydroperiods</u> ***(see p. 73)*** *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ____Permanently flooded or inundated ____Seasonally flooded or inundated ____Occasionally flooded or inundated _X_Saturated only 4 or more types present — points = 3 3 types present — points = 2 2 types present — point = 1 ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ ***Lake-fringe wetland*** **= 2 points** ____ ***Freshwater tidal wetland*** **= 2 points**	1
H 1.3. <u>Richness of Plant Species</u> ***(see p. 75)*** Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1

H 1.4. Interspersion of habitats *(see p. 76)* Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels] NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".	2
H 1.5. Special Habitat Features: *(see p. 77)* *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ____Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present ____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)* ____ Invasive plants cover less than 25% of the wetland area in each stratum of plants	0
H 1. TOTAL Score - potential for providing habitat *Add the scores in the column above*	5

Comments

FL-B

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? *(see text for a more detailed description of these priority habitats)*

__X__ **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 0.5% 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

1

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 3** X 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	2

FC-13

11

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 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 in the column above*	9
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): FL-C

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: NBH, WTR Affiliation: _____ Date of site visit: 7/26/06

DRAFT 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	6
Score for Hydrologic Functions	7
Score for Habitat Functions	14
TOTAL score for functions	27

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: FL-G **Date:** 26 July 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ___The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

FC-C

D	**Depressional and Flats Wetlands**	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	6
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	6

D	Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	1
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	3
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

FL-C

These questions apply to wetland [illegible]

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
_X_Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for 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 adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland* = 2 points**
____ ***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

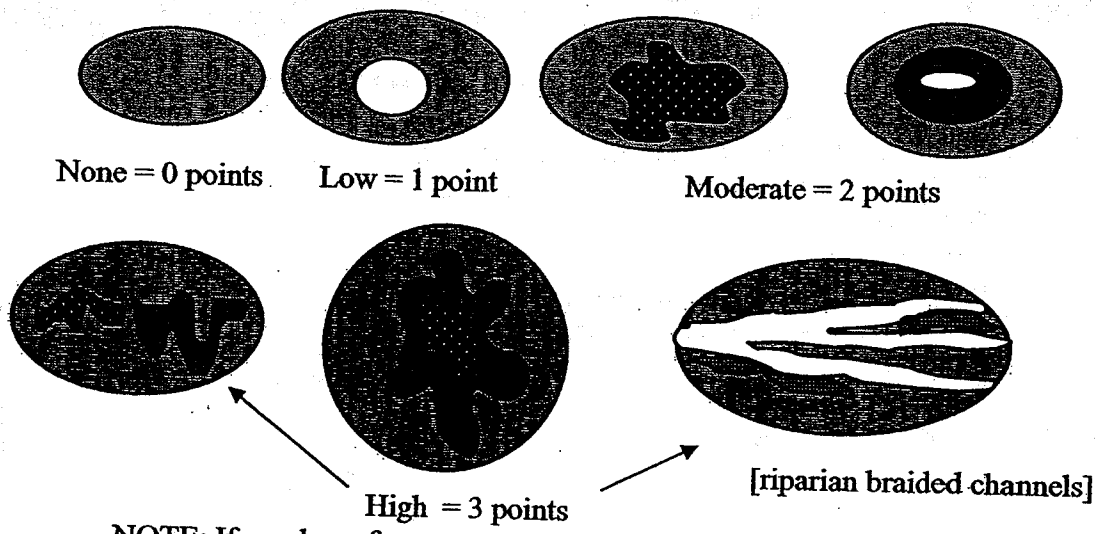
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

____Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

0

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

5

Comments

FL-C

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	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?
(see text for a more detailed description of these priority habitats)

_X_ **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 0.5% 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

1

FL-C

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 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 in the column above*	9
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criterion is met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): FL-D

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: NBH, WTK Affiliation: VRS Corp Date of site visit: 26 July 2005

DRAFT 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	16
Score for Hydrologic Functions	10
Score for Habitat Functions	10
TOTAL score for functions	36

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

Check list for Wetlands that Need Special Protection that Are Not included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: FL-D **Date:** 26 July 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

FL-D

D	**Depressional and Flats Wetlands**	
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	Points
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 2
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	16

	D1. Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	1
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	10
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	10

FL-D

These questions apply to wetlands of all HGM classes. Points

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
__X__Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

D

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
__X__Occasionally flooded or inundated
__X__Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

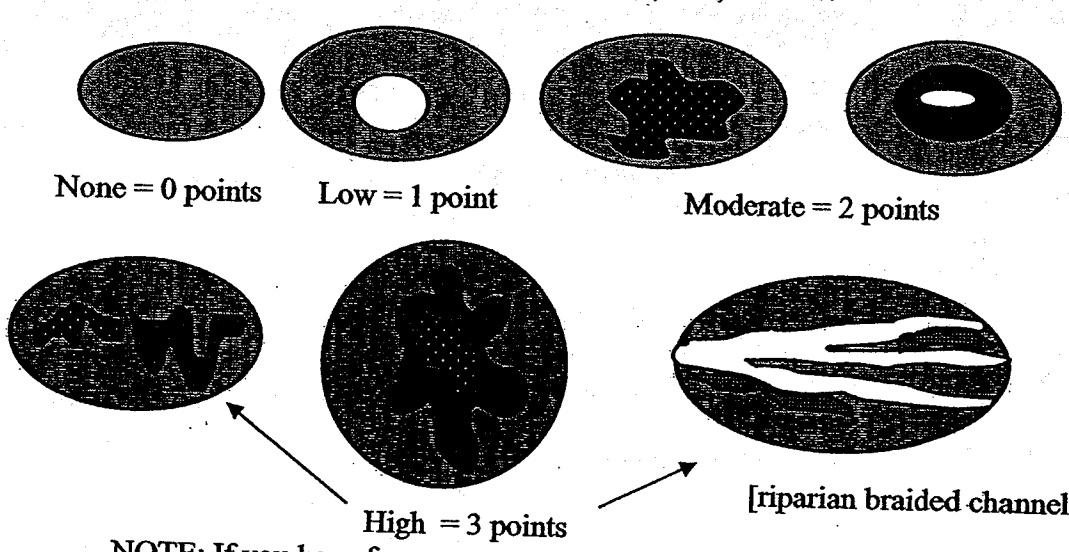
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

Ø

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

Ø

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

2

Comments

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?
(see text for a more detailed description of these priority habitats)

X **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.

X **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 0.5% 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

3

FL-D

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 0**

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**

FL-D

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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	10

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	**Category**
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): WPL-2

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/27/05

DRAFT 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	14
Score for Hydrologic Functions	16
Score for Habitat Functions	17
TOTAL score for functions	47

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and They Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: WPL-2 **Date:** 7/27/05

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ___The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

wpL-2

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality	
R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	8
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	6
R	*Add the points in the boxes above*	14
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	14

Comments

	R Riverine and Depressional Tidal Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? *(see p. 54)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	4
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	4
R	*Add the points in the boxes above*	8
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 57)* Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. X There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is 2 **NO** multiplier is 1	multiplier 2
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	16

Comments

WPL-2

These questions apply to wetlands of all HGM classes

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
__X__Emergent plants
__X__Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

__X__Permanently flooded or inundated
__X__Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

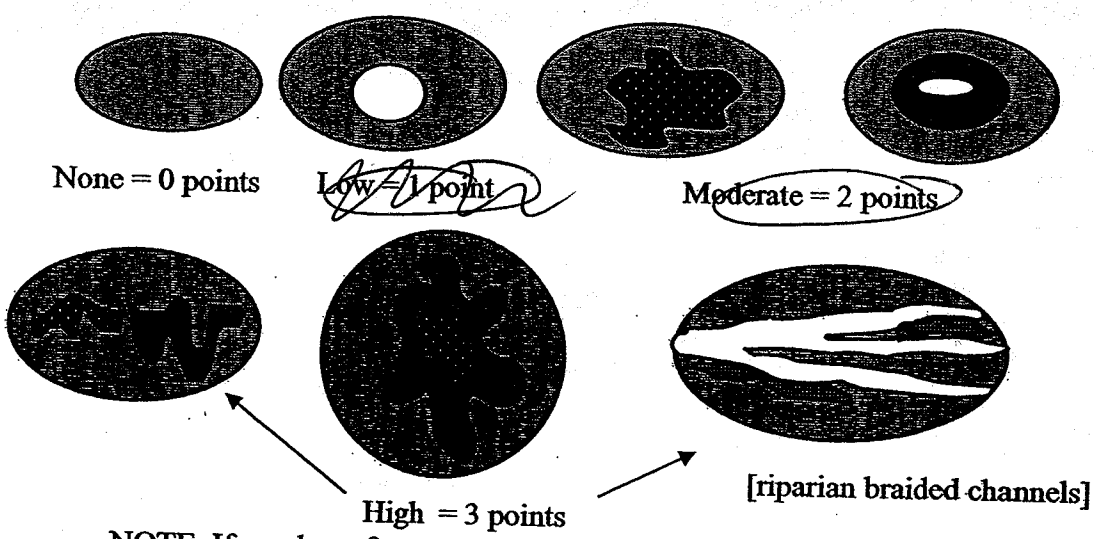
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

____Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

_X_ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

5

Comments

WPL-2

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	4

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? *(see text for a more detailed description of these priority habitats)* _X_ **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. _X_ **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 0.5% 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	2

WPL-2

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	2
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	17

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): WPL-1

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/27/05

DRAFT 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	9
Score for Hydrologic Functions	7
Score for Habitat Functions	14
TOTAL score for functions	30

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: WPL-1 **Date:** July 27, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ___The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

WPL-1

D	**Depressional and Flats Wetlands**	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	3
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	4
D	**Total for D 1** *Add the points in the boxes above*	9
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	9

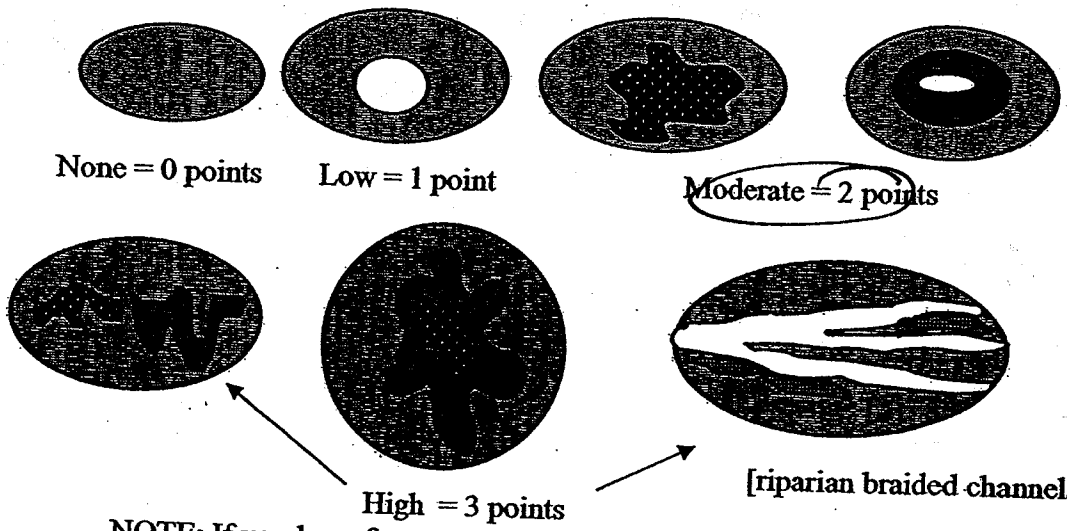
D	Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? *(see p. 46)*	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	5
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	0
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

WPL-1

H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed __X__Emergent plants ____Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) ____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	0
H 1.2. Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* __X__Permanently flooded or inundated ____Seasonally flooded or inundated ____Occasionally flooded or inundated ____Saturated only __X__Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____***Lake-fringe wetland* = 2 points** ____***Freshwater tidal wetland* = 2 points** 4 or more types present — points = 3 3 types present — points = 2 2 types present — (point = 1)	1
H 1.3. Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — (points = 1) < 5 species — points = 0	1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

____Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m)

__X__Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

__X__Invasive plants cover less than 25% of the wetland area in each stratum of plants

2

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

6

Comments

WPL-1

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

3

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

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? *(see text for a more detailed description of these priority habitats)*

_X_ **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 0.5% 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

WPL-1

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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): LA3-1

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/26/05

DRAFT 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	4
Score for Hydrologic Functions	8
Score for Habitat Functions	14
TOTAL score for functions	26

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: LA3-1 **Date:** July 26, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

LA3-1

D	**Depressional and Flats Wetlands**	
	WATER QUALITY FUNCTIONS - indicators that wetland functions to improve water quality	Points
D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	1
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	4
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 ~~NO multiplier is 1~~	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	4

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	1
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	8
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	8

LA3-1

These questions apply to wetlands of all HGM classes. Points

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
_X_Occasionally flooded or inundated
____Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

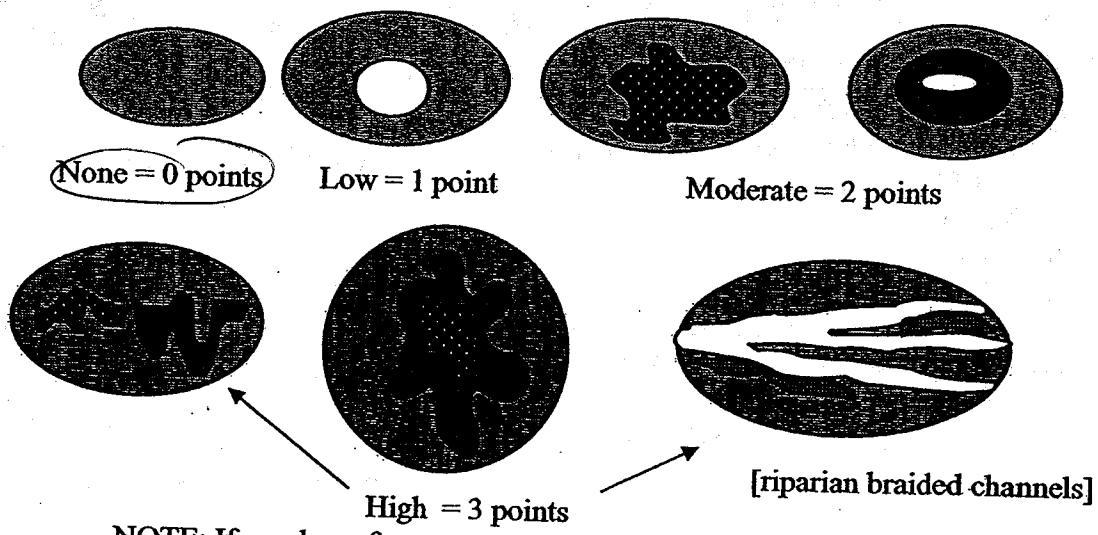
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

_X_ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

3

Comments

LA3-1

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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** X 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	4

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? *(see text for a more detailed description of these priority habitats)*

____**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.

_X_**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 0.5% 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

LA3-1

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 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 in the column above*	11
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): LA3-2

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/26/05

DRAFT 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	4
Score for Hydrologic Functions	8
Score for Habitat Functions	14
TOTAL score for functions	26

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check list for Wetlands that Need Special Protection and Are Not included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: LA3-2 **Date:** July 26, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   (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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ___The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

LA3-2

D	Depressional and Flats Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	1
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	4
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	4

	D. Depressional and Flats Wetlands	Points
	D 3. Does the wetland have the potential to reduce flooding and erosion? *(see p. 46)*	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	1
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	8
D	**D 4. Does the wetland have the opportunity to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	8

LA3-2

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
X Seasonally flooded or inundated
X Occasionally flooded or inundated
____Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

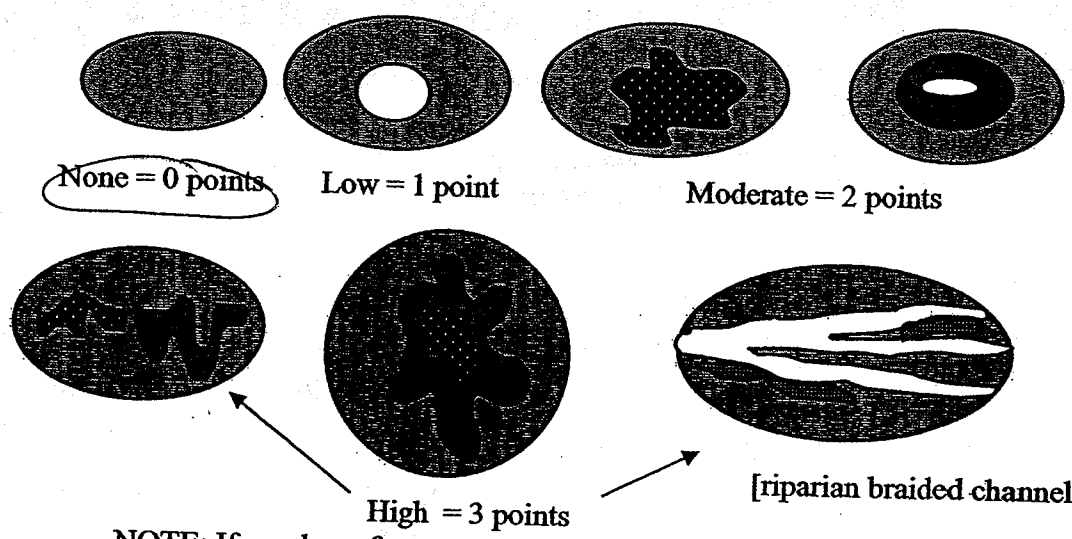
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

__X__ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

3

Comments

LA3-2

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	4

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? *(see text for a more detailed description of these priority habitats)*

____**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.

X **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 0.5% 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

LA3-2

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 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 in the column above*	11
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

LA3-3

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): LA3-3

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/26/05

DRAFT 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	4
Score for Hydrologic Functions	8
Score for Habitat Functions	10
TOTAL score for functions	22

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

The Special Wetlands that Need Special Protection and that Are Not included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: LA3-3 **Date:** July 26, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

LA3-3

D	**Depressional and Flats Wetlands**	
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	Points
D	**D 1. Does the wetland have the potential to improve water quality?** ***(see p. 38)***	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	1
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	4
D	**D 2. Does the wetland have the opportunity to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	4

D	Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	1
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	8
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	8

LA 3-3

These questions apply to wetlands of all HGM classes. Points

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
_X_Occasionally flooded or inundated
____Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

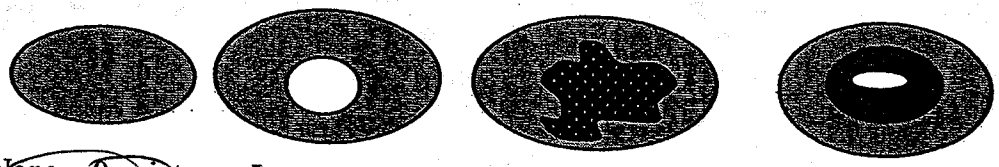
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

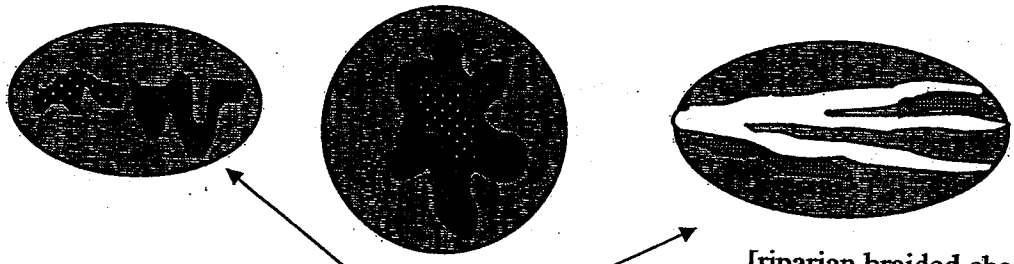
0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

2

Comments

LA>3

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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

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? *(see text for a more detailed description of these priority habitats)*

____**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.

X **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 0.5% 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

LKB-3

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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	10

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): [redacted]WTP - 1

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/28/05

DRAFT 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	8
Score for Hydrologic Functions	0
Score for Habitat Functions	6
TOTAL score for functions	14

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: PAWTP-1 **Date:** July 28, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

WTP-1

D	Depressional and Flats Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	8

	D. Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	0
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	0
D	**Total for D 3** *Add the points in the boxes above*	0
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	0

WTP-1

These questions apply to wetlands of all HGM classes. Points

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

0

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

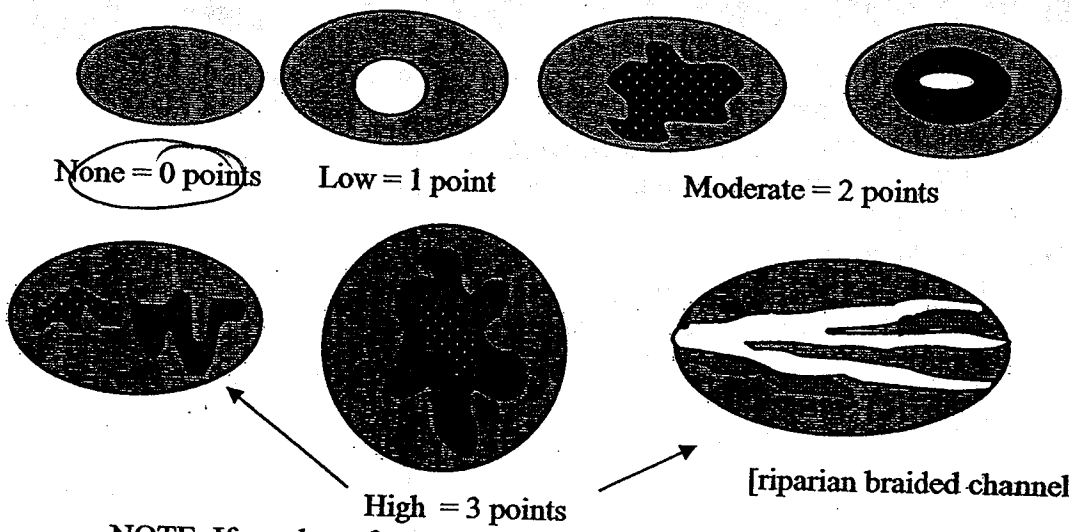
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

1

Comments

WTP-1

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

2

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

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? *(see text for a more detailed description of these priority habitats)*

____**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 0.5% 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

0

WTP-

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	2
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	5
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	6

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check if any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetlands A+B

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 8/3/05

DRAFT 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	6
Score for Hydrologic Functions	8
Score for Habitat Functions	7
TOTAL score for functions	21

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetlands A+B **Date:** August 3, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   (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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

A+B

R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	6
R	*Add the points in the boxes above*	6
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	6

Comments

	R 3. Does the wetland have the **potential** to reduce flooding and erosion? *(see p. 54)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 points = 9 If the ratio is between 10 – 20 points = 6 If the ratio is 5- <10 points = 4 If the ratio is 1- <5 points = 2 If the ratio is < 1 points = 1	1
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area points = 4 Vegetation does not meet above criteria points = 0	7
R	*Add the points in the boxes above*	8
R	**R 4. Does the wetland have the opportunity to reduce flooding and erosion?** *(see p. 57)* Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	8

Comments

A+B

[illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

_X_Permanently flooded or inundated
____Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
_X_ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	~~points = 2~~
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

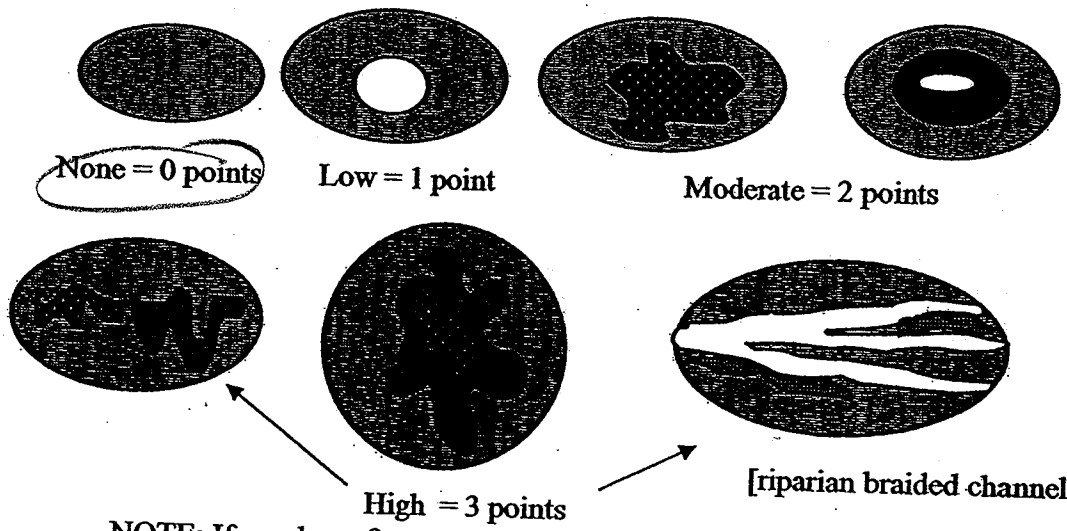
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

__X__ Invasive plants cover less than 25% of the wetland area in each stratum of plants

0

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

0

Comments

A+B

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	0

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?
(see text for a more detailed description of these priority habitats)

_X_ **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 0.5% 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

A+B

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 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 in the column above*	7
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	7

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetlands C + D

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK, NBH, GJM Affiliation: URS Corp Date of site visit: 3 Aug 2005

DRAFT 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	11
Score for Hydrologic Functions	14
Score for Habitat Functions	33
TOTAL score for functions	58

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetlands C+D **Date:** 8/3/05

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
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 wetland **meet both** of the following criteria?
____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
____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 wetland **meet all** of the following criteria?
____The wetland is on a slope (*slope can be very gradual*),
____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
____The water leaves the wetland **without being impounded**?
NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

C+D

	D. Depressional and Flats Wetlands	
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	Points
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	4
D	**Total for D 1** *Add the points in the boxes above*	11
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	11

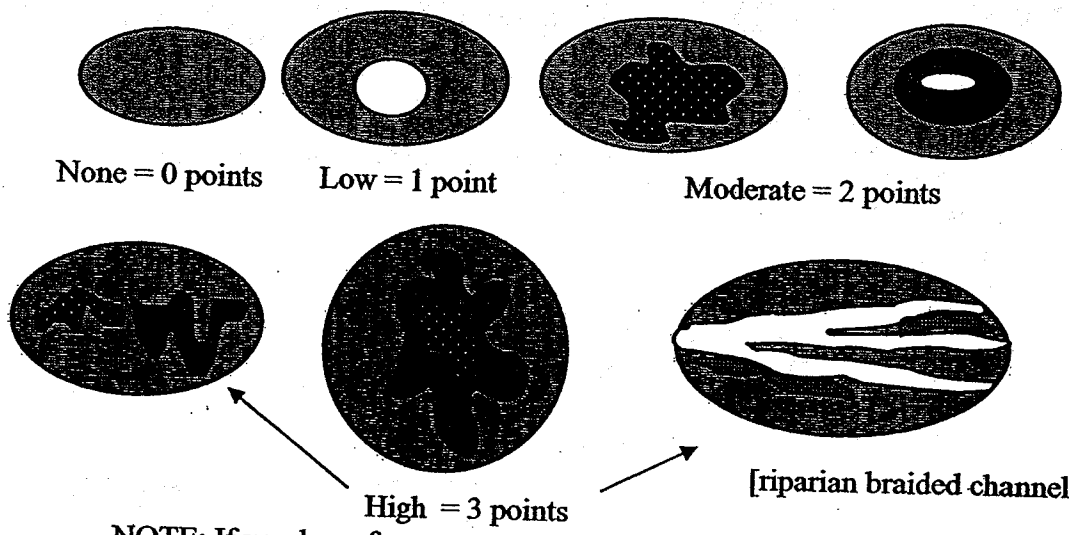
	D. Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland have the potential to reduce flooding and erosion? *(see p. 46)*	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	7
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	14
D	**D 4. Does the wetland have the opportunity to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	14

C+D

[illegible]	Points
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed X Emergent plants X Scrub/shrub (areas where shrubs have >30% cover) X Forested (areas where trees have >30% cover) X Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	4
H 1.2. Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* X Permanently flooded or inundated X Seasonally flooded or inundated ____Occasionally flooded or inundated X Saturated only ____Permanently flowing stream or river in, or adjacent to, the wetland X Seasonally flowing stream in, or adjacent to, the wetland ____***Lake-fringe wetland* = 2 points** ____***Freshwater tidal wetland* = 2 points** 4 or more types present — points = 3 3 types present — points = 2 2 types present — point = 1	3
H 1.3. Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	2

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

3

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).

X 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 for at least 33 ft (10m)

X 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

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

5

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

17

Comments

C+D

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **Points = 5** X 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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	4

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? *(see text for a more detailed description of these priority habitats)* ____**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). _X_**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. _X_**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 0.5% 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	3

C+D

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	17
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	33

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check if any criteria that apply to the wetland. Circle the appropriate category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland E

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 8/3/05

DRAFT 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	6
Score for Hydrologic Functions	8
Score for Habitat Functions	10
TOTAL score for functions	24

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	[illegible]	[illegible]
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland E **Date:** 8/3/05

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

E

R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	6
R	*Add the points in the boxes above*	6
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	6

Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? *(see p. 54)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	1
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	8
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 57)* Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	8

Comments

E

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

_X_Permanently flooded or inundated
____Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
_X_Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

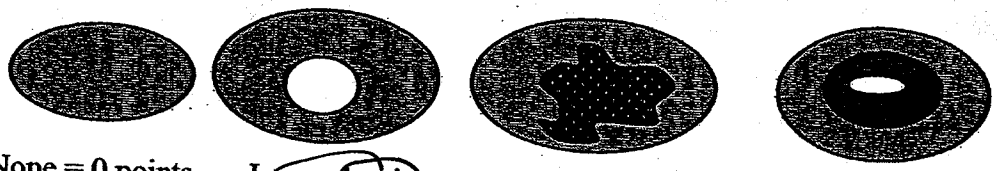
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

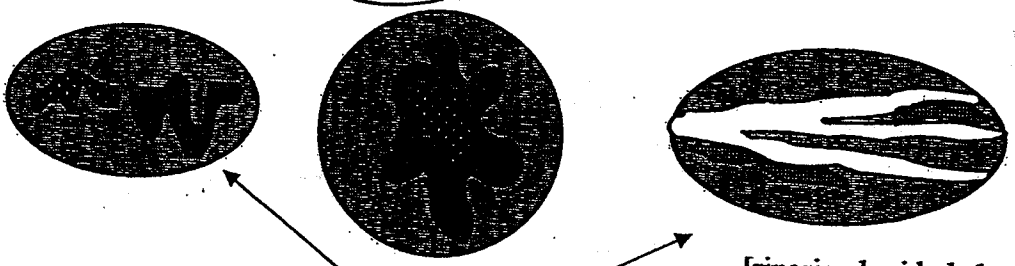
0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

__X__ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

3

Comments

E

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	0

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? *(see text for a more detailed description of these priority habitats)*

K **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 0.5% 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

15

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 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 in the column above*	7
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	10

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check all that apply to the wetland. Circle the appropriate Category when the appropriate criterion is met*	Category
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland F

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 8/3/05

DRAFT 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	6
Score for Hydrologic Functions	8
Score for Habitat Functions	15
TOTAL score for functions	29

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland F **Date:** 8/3/05

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

F

R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	6
R	*Add the points in the boxes above*	6
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	6

Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? ***(see p. 54)***	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	1
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	8
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p. 57)*** Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	8

Comments

F

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
__X__Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
__X__Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
__X__Seasonally flooded or inundated
____Occasionally flooded or inundated
__X__Saturated only
__X__ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

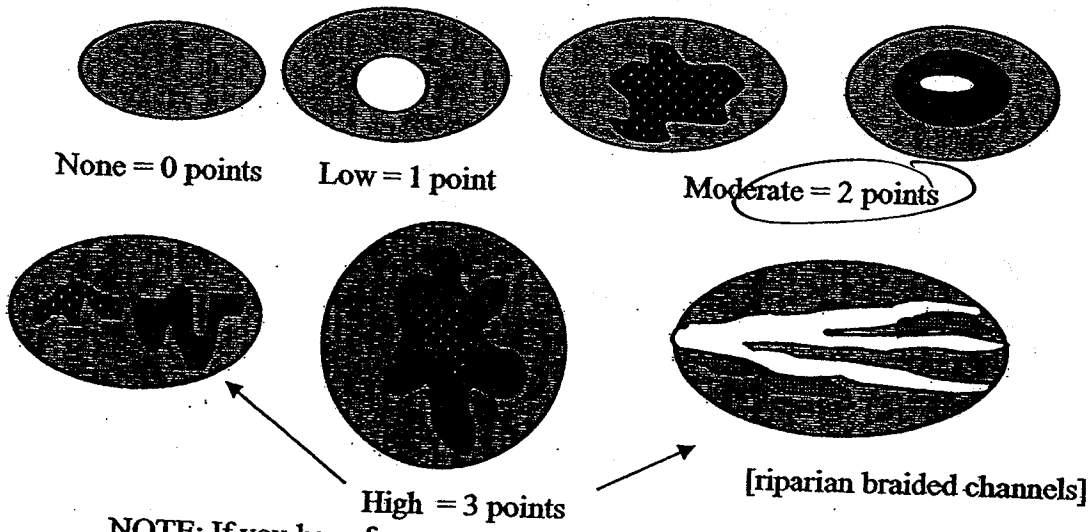
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

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

____Standing snags (diameter at the bottom > 4 inches) in the wetland

X 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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

8

Comments

F

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	0

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?
(see text for a more detailed description of these priority habitats)

X **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 0.5% 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

F

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 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 in the column above*	7
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	15

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check if any criteria that apply to the wetland. Circle the appropriate category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland 6

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTR, NBH Affiliation: URS Corp Date of site visit: 3 Aug 2005

DRAFT 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	6
Score for Hydrologic Functions	8
Score for Habitat Functions	22
TOTAL score for functions	36

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

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	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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.

G

Classification of Vegetated Wetlands for Western Washington

Wetland Name: Wetland 6 **Date:** 3 Aug 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   (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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   X The wetland is on a slope (*slope can be very gradual*),
   X 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**

5. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

C

S	**S 1. Does the wetland have the <u>potential</u> to improve water quality?** *(see p. 64)*	
S	S 1.1 Characteristics of average slope of wetland: 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	0
S	S 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES = 3 points NO = 0 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.* Dense, ungrazed, herbaceous vegetation > 90% of the wetland area points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > ½ of area points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0	3
S	**Total for S 1** *Add the points in the boxes above*	3
S	**S 2. Does the wetland have the <u>opportunity</u> to improve water quality?** *(see p. 67)* 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.* — Grazing in the wetland or within 150ft — Untreated stormwater discharges to wetland X Tilled fields, logging, or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 2
S	**TOTAL - Water Quality Functions** Multiply the score from S1 by S2 ***Add score to table on p. 1***	6

Comments

S	**S 3. Does the wetland 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.* Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) points = 6 Dense, uncut, **rigid** vegetation > 1/2 area of wetland points = 3 Dense, uncut, **rigid** vegetation > 1/4 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	6
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*	8
S	**S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 70)* Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* — Wetland has surface runoff that drains to a river or stream that has flooding problems — Other_____ *(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 1
S	**TOTAL - Hydrologic Functions** Multiply the score from S 3 by S 4 ***Add score to table on p. 1***	8

Comments

6

[illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
_X_Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
_X_Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

_X_Permanently flooded or inundated
____Seasonally flooded or inundated
____Occasionally flooded or inundated
_X_Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

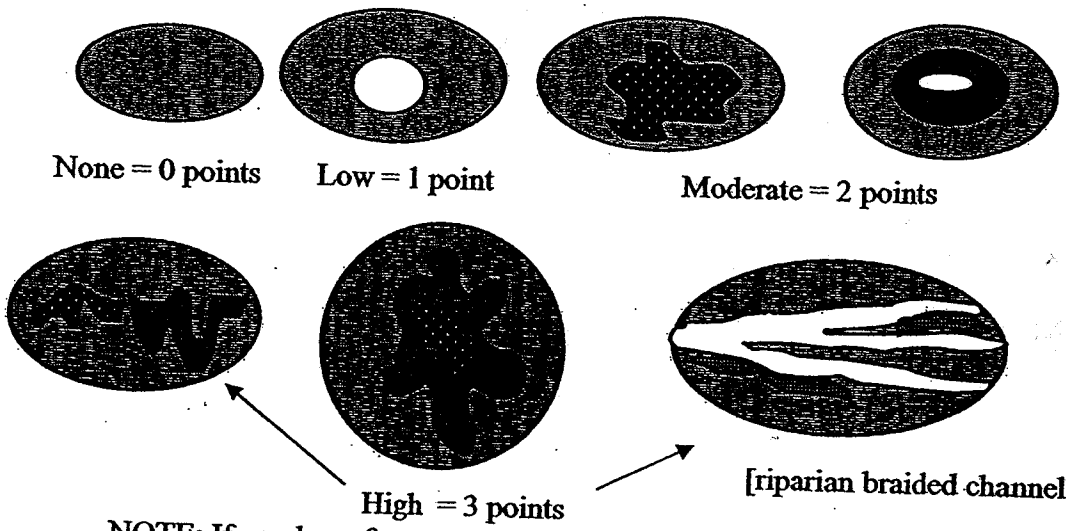
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

2

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

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

X 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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

3

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

8

Comments

6

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* X 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **Points = 5** X 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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	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? *(see text for a more detailed description of these priority habitats)* X **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. X **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 0.5% 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	3

6

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	14
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	22

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): H (Well Field)

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: URS Corp Date of site visit: 2 August 2005

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV X

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

Score for Water Quality Functions	2
Score for Hydrologic Functions	4
Score for Habitat Functions	16
TOTAL score for functions	22

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

[illegible]	[illegible]	[illegible]
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: H (Well) **Date:** 2 August 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

H

D	**Depressional and Flats Wetlands**	
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet points = 3 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland has an unconstricted surface outlet points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	1
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	2
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	2

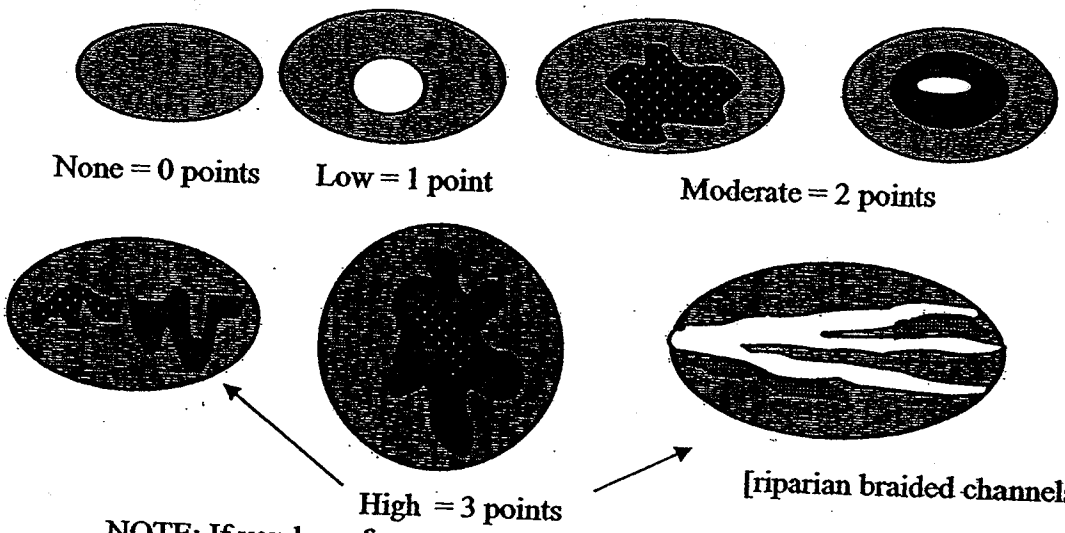
	D. Depressional and Flats Wetlands	Points
	D. HYDROLOGIC FUNCTIONS (Indicators that wetland functions improve flooding and stream degradation)	
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? *(see p. 46)*	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	0
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	1
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	4
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	4

H

These questions apply to wetlands of all Hydro classes	Points
HABITAT FUNCTIONS: Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed _X_Emergent plants ____Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) ____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	0
H 1.2. <u>Hydroperiods</u> *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ____Permanently flooded or inundated _X_Seasonally flooded or inundated ____Occasionally flooded or inundated _X_Saturated only 4 or more types present — points = 3 3 types present — points = 2 2 types present — point = 1 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____***Lake-fringe wetland*** **= 2 points** ____***Freshwater tidal wetland*** **= 2 points**	1
H 1.3. <u>Richness of Plant Species</u> *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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).

____ 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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

4

Comments

H

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* X 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	4

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?

(see text for a more detailed description of these priority habitats)

X **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 0.5% 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

H

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 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 in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	16

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ☒	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland I

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK, NBH Affiliation: URS Corp Date of site visit: 2 Aug 2005

DRAFT 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	10
Score for Hydrologic Functions	8
Score for Habitat Functions	22
TOTAL score for functions	40

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	X
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland I **Date:** 2 August 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

I

R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	4
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	6
R	*Add the points in the boxes above*	10
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	10

Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? *(see p. 54)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 points = 9 If the ratio is between 10 – 20 points = 6 If the ratio is 5- <10 points = 4 If the ratio is 1- <5 points = 2 If the ratio is < 1 points = 1	1
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area points = 4 Vegetation does not meet above criteria points = 0	7
R	*Add the points in the boxes above*	8
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 57)* Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	8

Comments

I

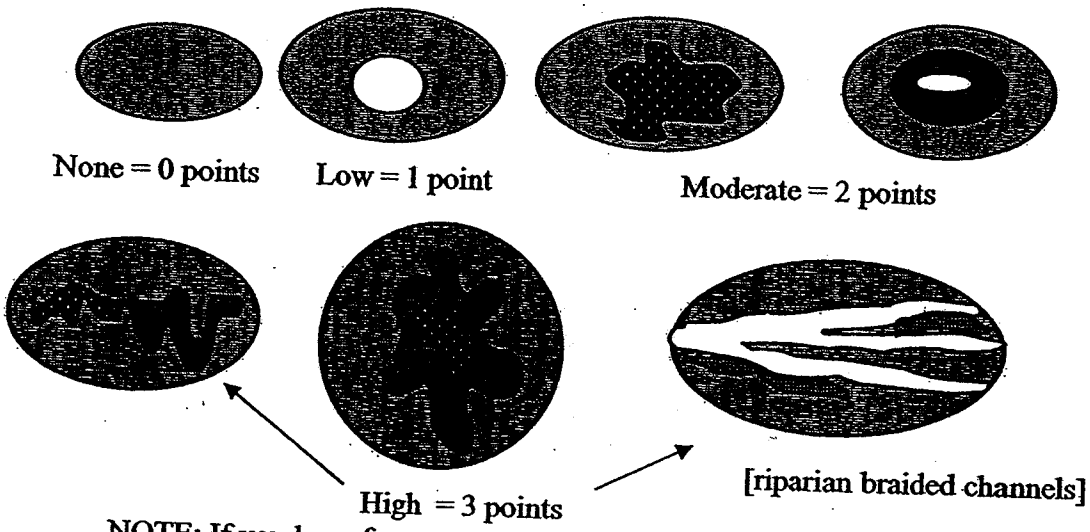
These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS – relationship to landscape, buffer, aquatic interspersion, interspersion within wetland, vegetation structure, food chain, water quality improvement, hydrology

H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed _X_Emergent plants _X_Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) ____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	1
H 1.2. Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ____Permanently flooded or inundated _X_Seasonally flooded or inundated ____Occasionally flooded or inundated _X_Saturated only 4 or more types present — points = 3 3 types present — points = 2 2 types present — point = 1 _X_ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ ***Lake-fringe wetland* = 2 points** ____ ***Freshwater tidal wetland* = 2 points**	2
H 1.3. Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

_X_ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

6

Comments

I

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **Points = 5** — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** X 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	4

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?
(see text for a more detailed description of these priority habitats)

X **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.

X **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 0.5% 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

3

I

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	16
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	22

6

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): J (island in middle of Elwha)

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: NBH, WTK Affiliation: URS Date of site visit: 8/2/05

DRAFT 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	8
Score for Hydrologic Functions	16
Score for Habitat Functions	26
TOTAL score for functions	50

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	X
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	X		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: J **Date:** 8/2/05

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	8
R	*Add the points in the boxes above*	8
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	8

Comments

R	**R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?** *(see p. 54)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	1
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	8
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 57)* Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 2
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	16

Comments

[illegible]

H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?

H 1.1 <u>Vegetation structure</u> *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
_X_Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. <u>Hydroperiods</u> *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
_X_Occasionally flooded or inundated
_X_Saturated only
_X_Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

3

H 1.3. <u>Richness of Plant Species</u> *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

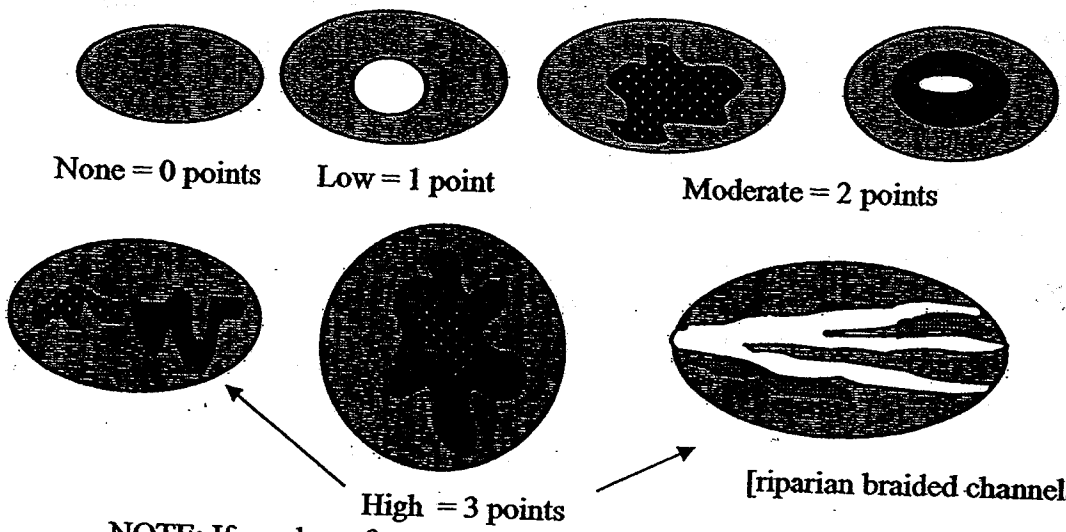
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

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

____ Standing snags (diameter at the bottom > 4 inches) in the wetland

X 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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

3

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

9

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* X 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	5
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**	4

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? *(see text for a more detailed description of these priority habitats)* X **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. X **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 0.5% 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	3

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	17
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	26

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check if any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland K

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: VRS Date of site visit: 8/2/05

DRAFT 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	8
Score for Hydrologic Functions	9
Score for Habitat Functions	7
TOTAL score for functions	24

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland K **Date:** August 2, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

K

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
____Occasionally flooded or inundated
_X_Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

0

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

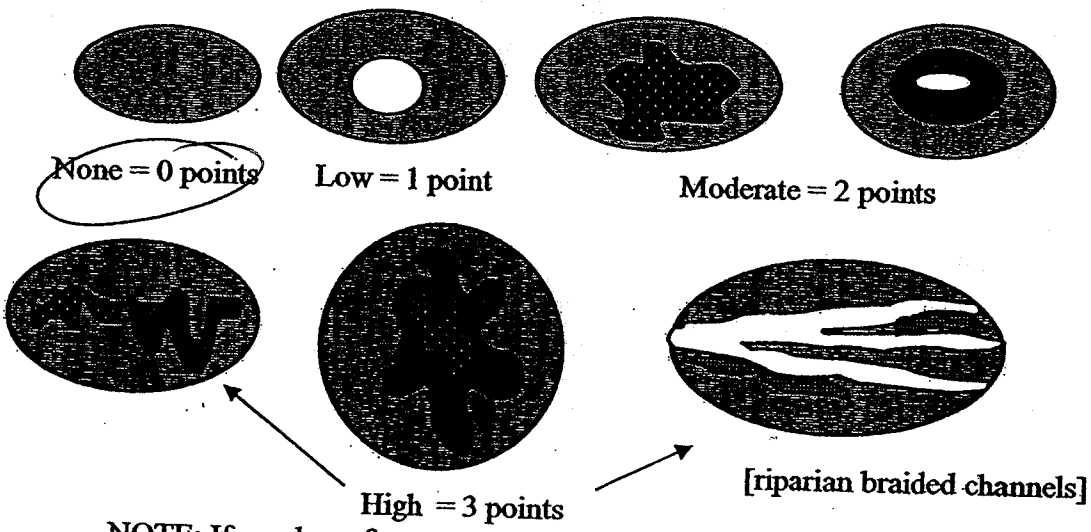
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

1

Comments

K

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

X — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

2

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**

0

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?
(see text for a more detailed description of these priority habitats)

X **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 0.5% 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

K

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 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 in the column above*	6
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	7

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off the criteria that apply to the wetland. Circle the appropriate category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

k

D	**Depressional and Flats Wetlands**	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
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**	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	9
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	9

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland L

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: URS Corp Date of site visit: 2 August 2005

DRAFT 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	10
Score for Hydrologic Functions	14
Score for Habitat Functions	25
TOTAL score for functions	49

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland L **Date:** 2 August 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

HABITAT FUNCTIONS

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
X Emergent plants
X Scrub/shrub (areas where shrubs have >30% cover)
X Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

2

H 1.2. Hydroperiods *(see p. 73)*

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

X Permanently flooded or inundated
X Seasonally flooded or inundated
____Occasionally flooded or inundated
X Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

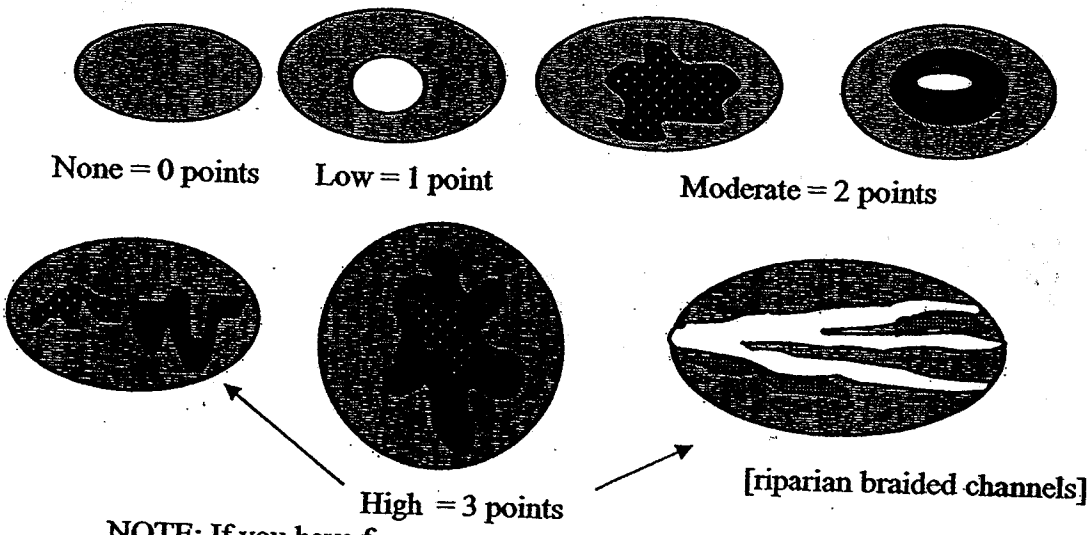
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

3

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).

X 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 for at least 33 ft (10m)

X 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

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

5

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

13

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	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? *(see text for a more detailed description of these priority habitats)* _X_**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. _X_**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 0.5% 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	3

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 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 in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	25

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

D	**Depressional and Flats Wetlands**	
	WATER QUALITY FUNCTIONS - indicators that wetland functions to improve water quality	Points
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet points = 3 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland has an unconstricted surface outlet points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	3
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	4
D	**Total for D 1** *Add the points in the boxes above*	10
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	10

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	5
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	14
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	14

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland M

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: URS Corp Date of site visit: 2 August 2005

DRAFT 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	8
Score for Hydrologic Functions	14
Score for Habitat Functions	14
TOTAL score for functions	36

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland M **Date:** 2 August 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ___The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

M

D	**Depressional and Flats Wetlands**	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	1
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	4
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	8

D 3.0 HYDROLOGIC FUNCTIONS of Indicators that wetland functions improve flooding and stream degradation

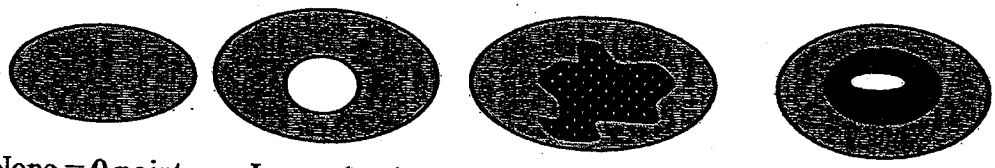
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? *(see p. 46)*	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	5
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	14
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	14

H

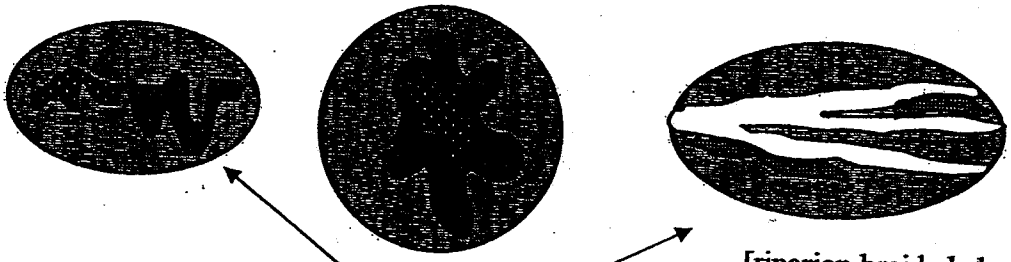
H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed _X_Emergent plants ____Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) ____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	0
H 1.2. Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ____Permanently flooded or inundated ____Seasonally flooded or inundated _X_Occasionally flooded or inundated _X_Saturated only 4 or more types present — points = 3 3 types present — points = 2 2 types present — point = 1 ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ ***Lake-fringe wetland*** **= 2 points** ____***Freshwater tidal wetland*** **= 2 points**	2
H 1.3. Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

4

Comments

M

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	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? *(see text for a more detailed description of these priority habitats)*

_X_ **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 0.5% 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

M

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 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 in the column above*	10
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland N

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 8/2/05

DRAFT 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	~~8~~ 7
Score for Hydrologic Functions	5
Score for Habitat Functions	10
TOTAL score for functions	22

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland N **Date:** August 2, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

N

D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — ~~points = 3~~ Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	7
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	8

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	5
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	5

N

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
_X_Occasionally flooded or inundated
_X_Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

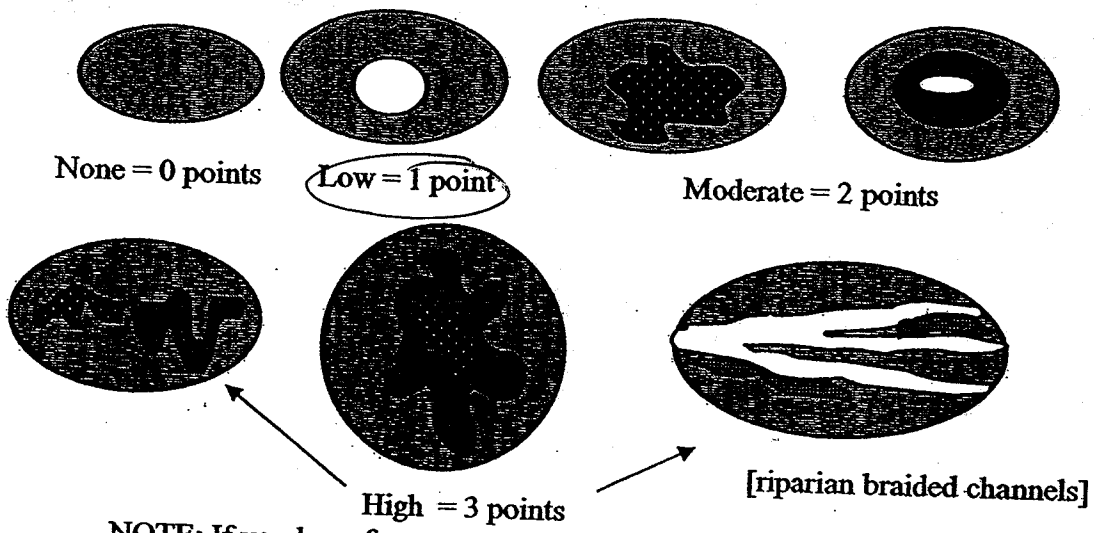
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

4

Comments

N

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	2
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**	0

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?
(see text for a more detailed description of these priority habitats)

X **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 0.5% 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

N

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 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 in the column above*	6
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	10

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland O

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: GJM + BK Affiliation: URS Corp Date of site visit: 8/3/05

DRAFT 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	6
Score for Hydrologic Functions	5
Score for Habitat Functions	21
TOTAL score for functions	32

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		✓
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		✓
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: O **Date:** 8/3/65

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

0

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality	
R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	6
R	*Add the points in the boxes above*	6
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	6

Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? ***(see p. 54)***	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	1
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	8
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p. 57)*** Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	5

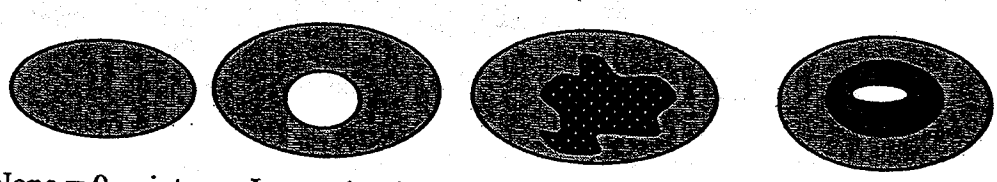
Comments

0

[illegible]	Points
HABITAT FUNCTIONS – Indicators that the wetland functions to provide important habitat	
H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed __√__Emergent plants ____Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) ____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	0
H 1.2. Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ____Permanently flooded or inundated __√__Seasonally flooded or inundated ____Occasionally flooded or inundated ____Saturated only __√__Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____***Lake-fringe wetland* = 2 points** ____***Freshwater tidal wetland* = 2 points** 4 or more types present — points = 3 3 types present — points = 2 2 types present — point = 1	1
H 1.3. Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points

High = 3 points [riparian braided channels]

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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

✓ Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

2

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

6

Comments

0

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	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?
(see text for a more detailed description of these priority habitats)

✓ **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 0.5% 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

3

0

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	6+12 = 18

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): ER-1

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: URS Corps Date of site visit: 3 Aug 2005

DRAFT 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	12
Score for Hydrologic Functions	5
Score for Habitat Functions	20
TOTAL score for functions	37

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Wetland A **Date:** 3 August 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
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 wetland **meet both** of the following criteria?
____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
____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 wetland **meet all** of the following criteria?
____The wetland is on a slope (*slope can be very gradual*),
____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
____The water leaves the wetland **without being impounded**?
NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

-ER-1

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	6
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland 1 A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 2
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	12

D 3. Does the wetland have the potential to reduce flooding and erosion? *(see p. 46)*

D	**D 3.1 Characteristics of surface water flows out of the wetland**	
	Wetland has no surface water outlet — points = 4	
	Wetland has an intermittently flowing, or highly constricted, outlet — points = 2	1
	Wetland is flat and has no obvious outlet and/or outlet is a small ditch — points = 1	
	Wetland has an unconstricted surface outlet — points = 0	
D	**D 3.2 Depth of storage during wet periods**	
	Estimate the height of ponding above the bottom of the outlet	
	Marks of ponding are 3 ft or more above the surface — points = 7	
	The wetland is a "headwater" wetland" — points = 5	
	Marks of ponding between 2 ft to < 3 ft from surface — points = 5	1
	Marks are at least 0.5 ft to < 2 ft from surface — points = 3	
	Wetland is flat but has small depressions on the surface that trap water — points = 1	
	Marks of ponding less than 0.5 ft — points = 0	
D	**D 3.3 Contribution of wetland 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 itself.	
	The area of the basin is less than 10 times the area of wetland — points = 5	3
	The area of the basin is 10 to 100 times the area of the wetland — points = 3	
	The area of the basin is more than 100 times the area of the wetland — points = 0	
	Wetland is in the FLATS class.(basin = the wetland, by definition) — points = 5	
D	**Total for D 3** *Add the points in the boxes above*	5

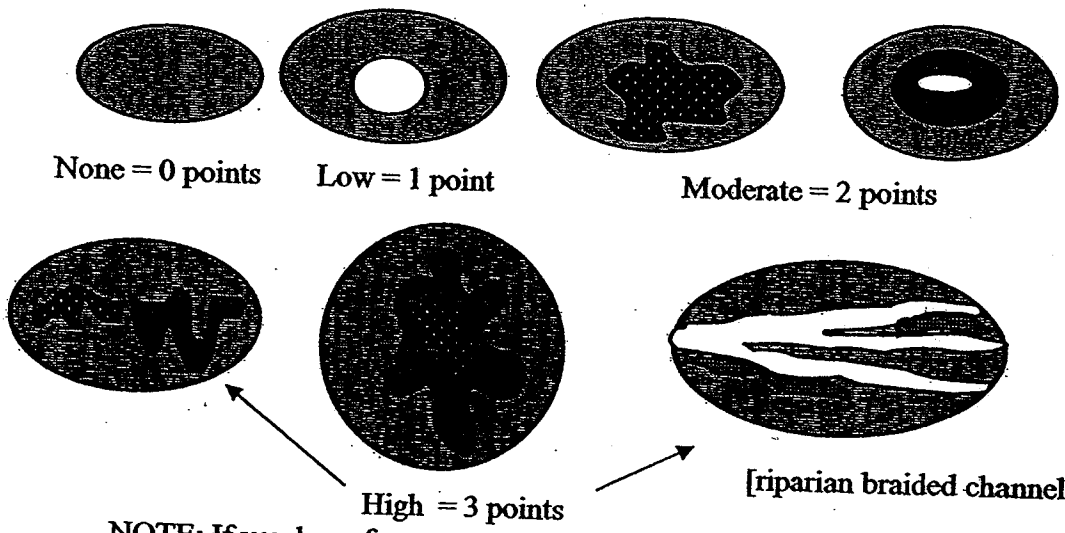
D	**D 4. Does the wetland have the opportunity to reduce flooding and erosion?** *(see p. 49)*	
	Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive 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.	
	Note which of the following indicators of opportunity apply.	
	— Wetland is in a headwater of a river or stream that has flooding problems	
	— Wetland drains to a river or stream that has flooding problems	multiplier
	— Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	1
	— 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*	5

ER-1

H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____Aquatic bed X Emergent plants X Scrub/shrub (areas where shrubs have >30% cover) X Forested (areas where trees have >30% cover) X Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more — points = 4 3 types — points = 2 2 types — points = 1 1 type — points = 0	4
H 1.2. Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ____Permanently flooded or inundated X Seasonally flooded or inundated X Occasionally flooded or inundated X Saturated only 4 or more types present — points = 3 3 types present — points = 2 2 types present — point = 1 ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ ***Lake-fringe wetland* = 2 points** ____ ***Freshwater tidal wetland* = 2 points**	2
H 1.3. Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* *List species below if you want to:* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

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

X 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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

3

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

12

Comments

ER-1

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 3** X 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	3
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**	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? *(see text for a more detailed description of these priority habitats)*

____**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 0.5% 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

0

ER-1

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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	20

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): ER-2

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: ___

DRAFT 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	8
Score for Hydrologic Functions	3
Score for Habitat Functions	4
TOTAL score for functions	15

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

The Fatal Flaw Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: ER-2 **Date:** _____

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

D	Depressional and Flats Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	8

	D1. Depressional and Flats Wetlands	Points
	D5. HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	0
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	3
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	3

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that wetland functions as improved habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

0

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

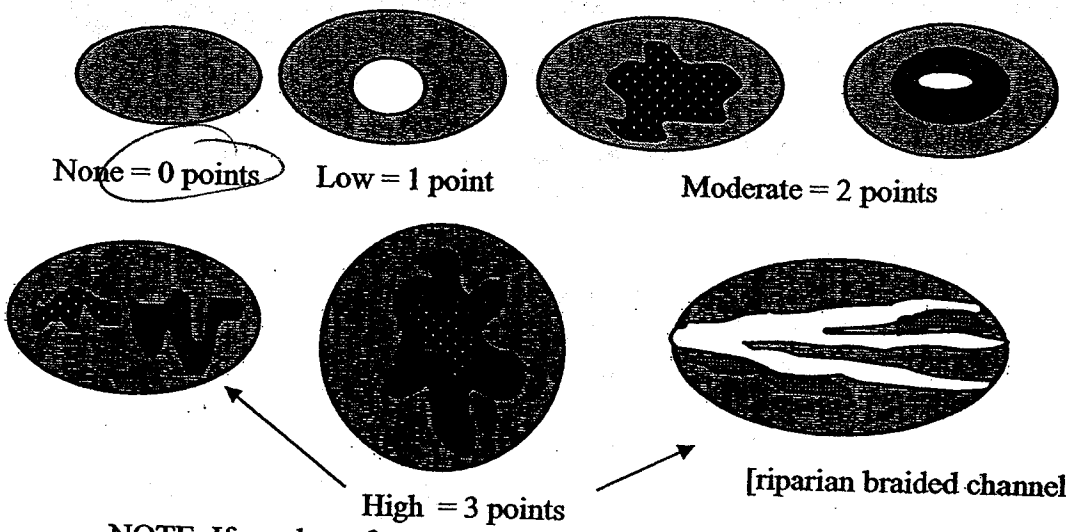
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

1

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

X Buffer does not meet any of the criteria above. **Points = 1**

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

0

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	2
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	4

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): ED-1

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/28/05

DRAFT 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	3
Score for Hydrologic Functions	9
Score for Habitat Functions	5
TOTAL score for functions	17

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: ED-1 **Date:** 7/28/05

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ___The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

ED-1

			Points
D	**Depressional and Flat Wetlands**		
	WATER QUALITY FUNCTIONS - *Indicators that wetland functions to improve water quality*		
D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*		
D	D 1.1 Characteristics of surface water flows out of the wetland:		
	Wetland is a depression with no surface water outlet	points = 3	3
	Wetland has an intermittently flowing, or highly constricted, outlet	points = 2	
	Wetland has an unconstricted surface outlet	points = 1	
	Wetland is flat and has no obvious outlet and/or outlet is a ditch	points = 1	
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs).		
	YES	points = 4	0
	NO	points = 0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	0
	Wetland has persistent, ungrazed vegetation <1/10 of area	points = 0	
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.*		
	Area seasonally ponded is > ½ total area of wetland	points = 4	0
	Area seasonally ponded is > ¼ total area of wetland	points = 2	
	Area seasonally ponded is < ¼ total area of wetland	points = 0	
	NOTE: *See text for indicators of seasonal and permanent inundation..*		
D	**Total for D 1** *Add the points in the boxes above*		3
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.*		
	— Grazing in the wetland or within 150 ft		
	— Untreated stormwater discharges to wetland		
	— Tilled fields or orchards within 150 ft of wetland		
	— A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging		
	— Residential, urban areas, golf courses are within 150 ft of wetland		multiplier
	— Wetland is fed by groundwater high in phosphorus or nitrogen		
	— Other_____		1
	YES multiplier is 2 **NO** multiplier is 1		
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*		3

	D. Depressional and Flats Wetlands	Points
	D 3. Does the wetland have the potential to reduce flooding and erosion? *(see p. 46)*	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	9
D	**D 4. Does the wetland have the opportunity to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	9

ED-1

HABITAT FUNCTIONS – [illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland* = 2 points**
____ ***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

0

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

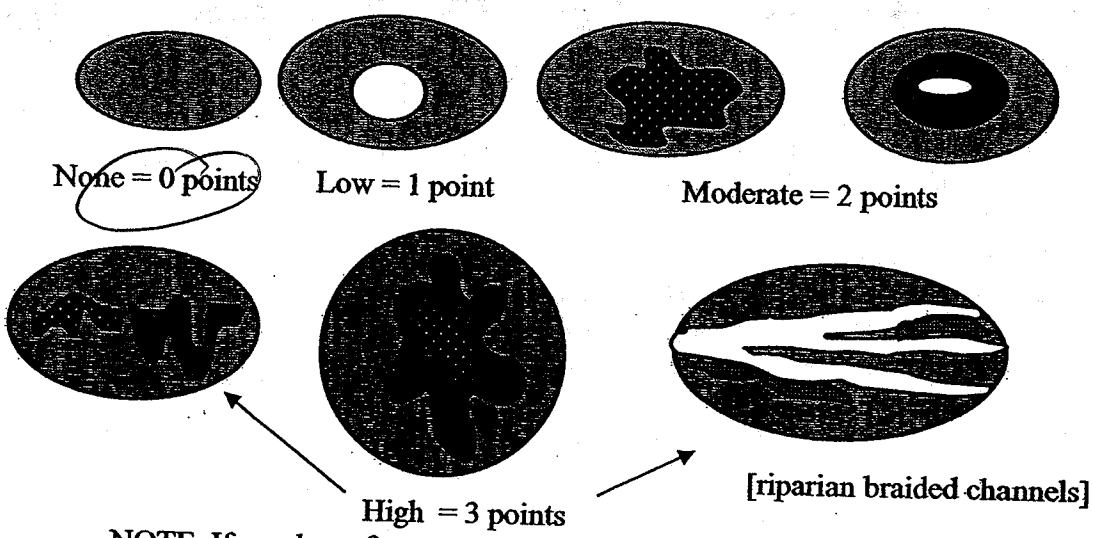
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

1

Comments

ED-1

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	0
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

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

ED-1

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 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 in the column above*	4
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	5

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate ratings.* *Apply the appropriate criteria first.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): ED-2

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: URS Corp Date of site visit: 28 July 2005

DRAFT 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	22
Score for Hydrologic Functions	14
Score for Habitat Functions	4
TOTAL score for functions	40

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	X
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: ED-2 **Date:** 28 July 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   X The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   X 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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

ED-2

L	**Lake Fringe Wetlands**	Points
L	**WATER QUALITY FUNCTIONS** – Indicators that wetland functions to improve water quality	
L	**L 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 59)***	
L	L 1.1 Average width of vegetation along the lakeshore : Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is more than 16 (5m) wide and <33ft — points = 3 Vegetation is more than 6ft (2m) wide and <16 ft — points = 1 Vegetation is less than 6 ft wide — points = 0	1
L	L 1.2 Characteristics of the vegetation in the wetland: *choose the appropriate description that results in the highest points, \and do not include any open water in your estimate of coverage. In this case the herbaceous plants can be either the dominant form (called emergent class) or as an understory in a shrub or forest community.* Herbaceous plants cover >90% of the vegetated area — points = 6 Herbaceous plants cover >2/3 of the vegetated area — points = 4 Herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed cover > 2/3 of the vegetated area — points = 0	6
L	*Add the points in the boxes above*	7
L	**L 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 61)*** Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. *Note which of the following conditions provide the sources of pollutants.* — Wetland is along the shores of a lake or reservoir that does not meet water quality standards — Grazing in the wetland or within 150ft — Polluted water discharges to wetland along upland edge — Tilled fields or orchards within 150 feet of wetland — Residential or urban areas are within 150 ft of wetland — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) X Power boats with gasoline or diesel engines use the lake — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 2
L	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from L1 by L2 ***Add score to table on p. 1***	14

Comments

L	**L 3. Does the wetland have the <u>potential</u> to reduce shoreline erosion?** ***(see p. 62)***	
L	L 3 Average width and characteristics of vegetation along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 6 > ¾ of fringe vegetation is shrubs or trees at least 6 ft. (2 m) wide points = 4 > ¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 4 Fringe vegetation is at least 6 ft (2m) wide points = 2 Fringe vegetation is less than 6 ft (2m) wide points = 0	2
L	*Record the points from the box above*	2
L	**L 4. Does the wetland have the <u>opportunity</u> to reduce erosion?** ***(see p. 63)*** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* — There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. — There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other wetlands) than can be damaged by shoreline erosion — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 2
L	**TOTAL - Hydrologic Functions** Multiply the score from L 3 by L 4 ***Add score to table on p. 1***	4

Comments

ED-2

HABITAT FUNCTION

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
X Emergent plants
X Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

X Permanently flooded or inundated
X Seasonally flooded or inundated
____Occasionally flooded or inundated
X Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

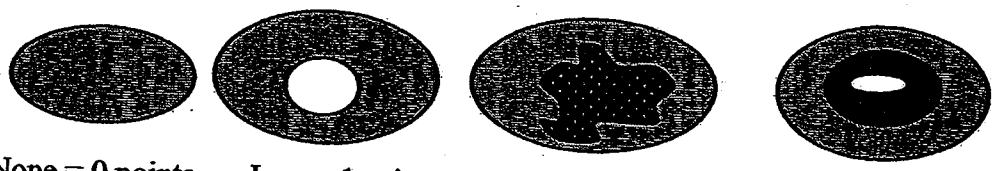
Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats *(see p. 76)* Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels] NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".	1
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 for at least 33 ft (10m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present ____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)* ____ Invasive plants cover less than 25% of the wetland area in each stratum of plants	0
H 1. TOTAL Score - potential for providing habitat *Add the scores in the column above*	5

Comments

ED-2

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **Points = 5** X 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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	4

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? *(see text for a more detailed description of these priority habitats)* X **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. X **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 0.5% 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	3

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	17 +5
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	22

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): PR-1

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/29/05

DRAFT 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	26
Score for Hydrologic Functions	32
Score for Habitat Functions	15
TOTAL score for functions	67

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: PR-1 **Date:** July 29, 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

PR-1

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality	
R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — ~~points = 8~~ Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	2
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	8
R	*Add the points in the boxes above*	10
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — Grazing in the wetland or within 150ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 feet of wetland X A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft of wetland — 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 — Other YES multiplier is 2 NO multiplier is 1	multiplier 2
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	20

Comments

R	Riverine and Depressional Tidal Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? *(see p. 54)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	9
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	16
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 57)* Answer YES if the wetland 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.* X There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. X There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* YES multiplier is **2** NO multiplier is **1**	multiplier 2
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	32

Comments

PR-1

These questions apply to [illegible] of all HGM classes. Points

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

- ___ Aquatic bed
- X Emergent plants
- ___ Scrub/shrub (areas where shrubs have >30% cover)
- ___ Forested (areas where trees have >30% cover)
- X Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

- ___ Permanently flooded or inundated
- X Seasonally flooded or inundated
- X Occasionally flooded or inundated
- X Saturated only
- ___ Permanently flowing stream or river in, or adjacent to, the wetland
- ___ Seasonally flowing stream in, or adjacent to, the wetland
- ___ ***Lake-fringe wetland* = 2 points**
- ___ ***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

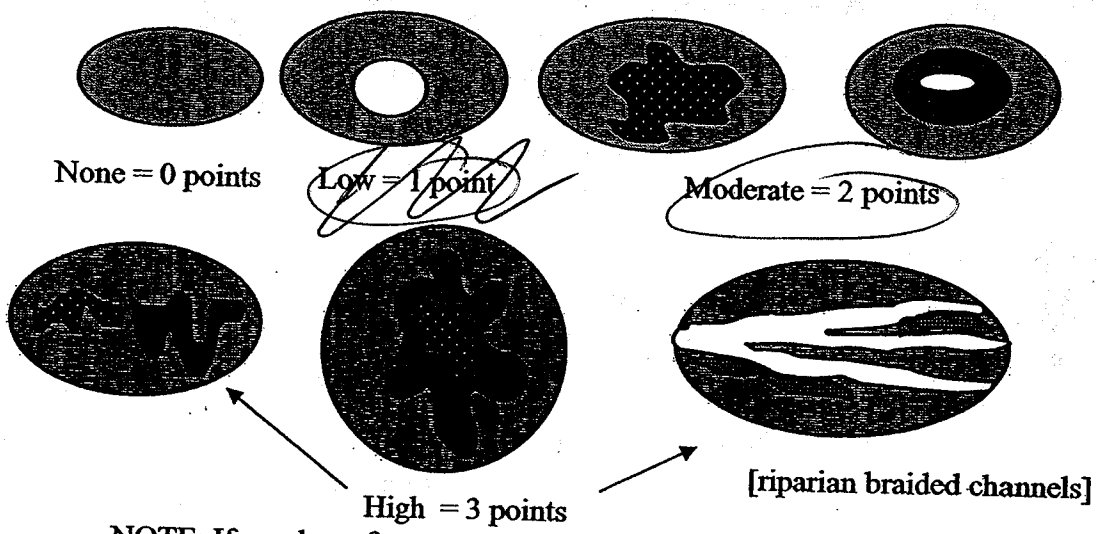
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

____Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

7

Comments

PR-1

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	2
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**	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?

(see text for a more detailed description of these priority habitats)

X **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 0.5% 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

PR-1

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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	15

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): PR-2

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 7/29/05

DRAFT 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	6
Score for Hydrologic Functions	7
Score for Habitat Functions	5
TOTAL score for functions	18

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: PR-2 **Date:** 7/29/05

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

PR-2

D	**D. Depressional and Flat Wetlands**	
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	Score
D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	0
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	3
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* X Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 2
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	6

	D Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

PR-2

HABITAT FUNCTIONS – [illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
_X_Occasionally flooded or inundated
_X_Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

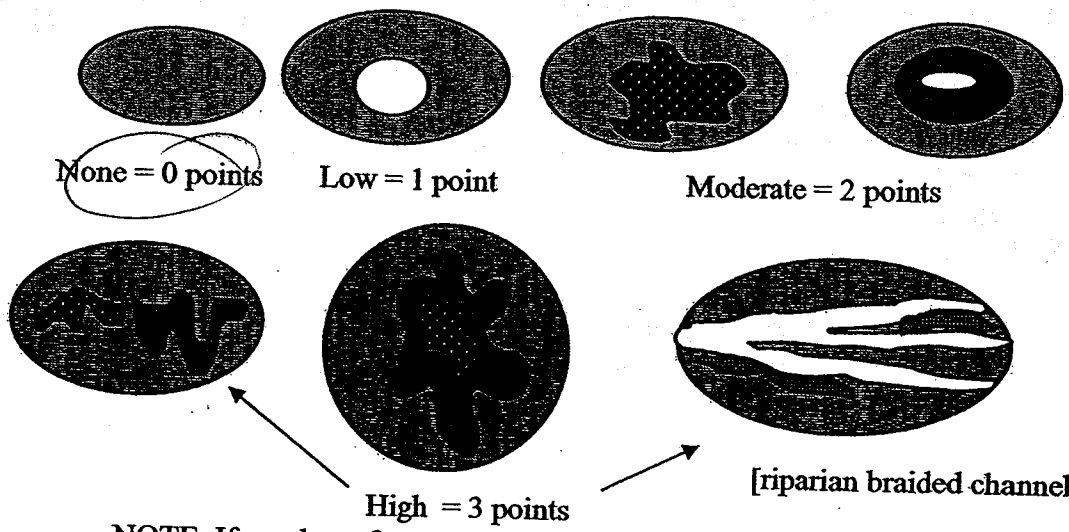
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

0

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

1

Comments

PR-2

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	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 1 mi of a lake greater than 20 acres? YES = **1 point** NO = **0 points**	0

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? *(see text for a more detailed description of these priority habitats)* ____**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 0.5% 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	0

PR-2

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 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 in the column above*	4
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	5

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): PR-3

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: URS Corp Date of site visit: 29 July 2005

DRAFT 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	14
Score for Hydrologic Functions	7
Score for Habitat Functions	14
TOTAL score for functions	35

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: PR3 **Date:** 29 July 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

PR-3

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	7
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* X Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 2
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	14

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

PR-3

HABITAT FUNCTIONS

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
_X_Emergent plants
_X_Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
____Occasionally flooded or inundated
_X_Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

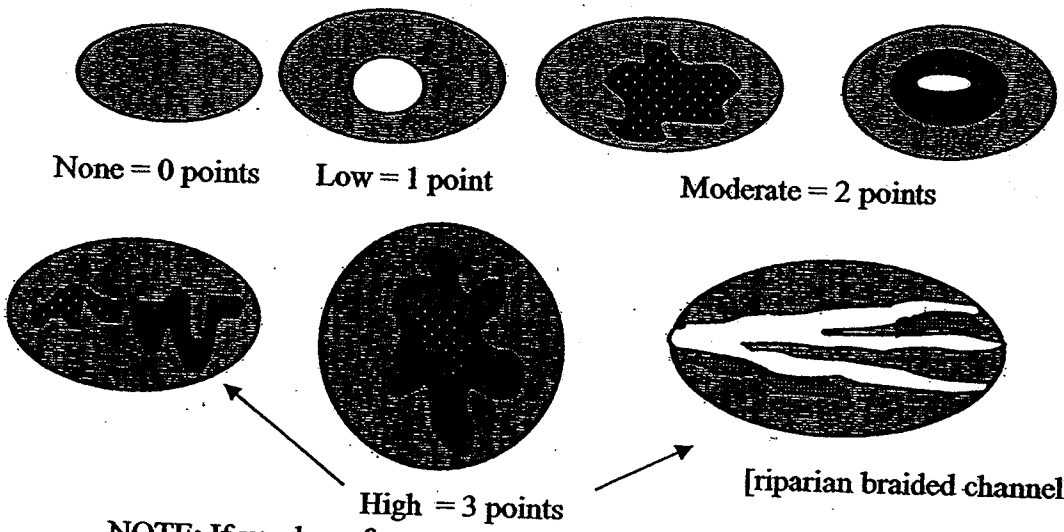
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

__X__ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

5

Comments

PR:3

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** X No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	2
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

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? *(see text for a more detailed description of these priority habitats)* X **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. X **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 0.5% 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	3

PR-3

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 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 in the column above*	9
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

+5

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): PR-4

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: URS Corp Date of site visit: 25 Aug 2005

DRAFT 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	20
Score for Hydrologic Functions	9
Score for Habitat Functions	13
TOTAL score for functions	42

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

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	X		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: PR-4 **Date:** 25 August 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   (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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

PR-4

D	**D. Depressional and Flat Wetlands**	
	WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	Points
D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 (NO) — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	10
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* X Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 2
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	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	9
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	9

PE-4

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

- ___ Aquatic bed
- X Emergent plants
- X Scrub/shrub (areas where shrubs have >30% cover)
- ___ Forested (areas where trees have >30% cover)
- ___ Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

- ___ Permanently flooded or inundated
- ___ Seasonally flooded or inundated
- X Occasionally flooded or inundated
- X Saturated only
- ___ Permanently flowing stream or river in, or adjacent to, the wetland
- ___ Seasonally flowing stream in, or adjacent to, the wetland
- ___ ***Lake-fringe wetland*** **= 2 points**
- ___ ***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

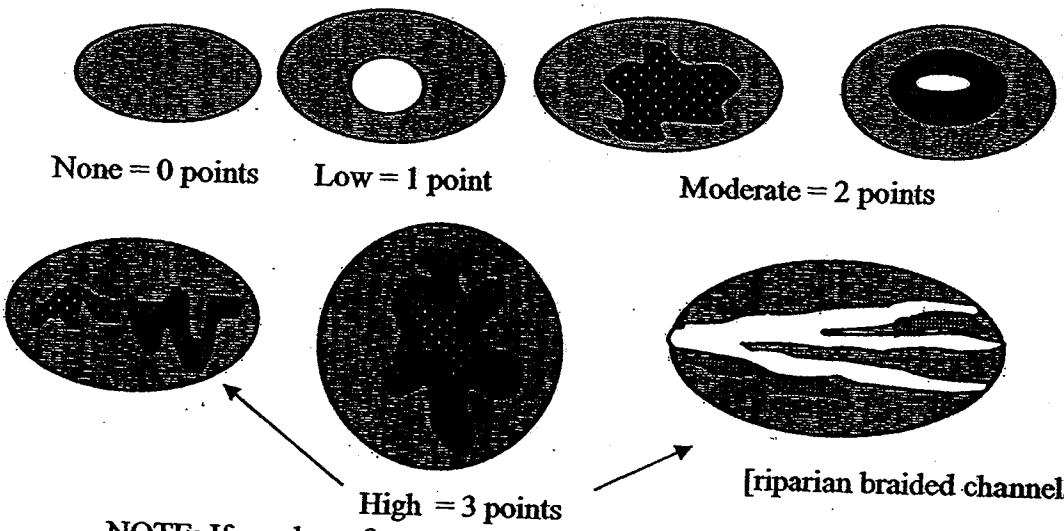
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

5

Comments

PR-4

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** X No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	2
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**	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?
(see text for a more detailed description of these priority habitats)

____**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.

X **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 0.5% 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

PR-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 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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	13

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category. Then the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): PR-5

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: WTK Affiliation: VRS Corp Date of site visit: 25 Aug 2005

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV X

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	9
Score for Habitat Functions	11
TOTAL score for functions	28

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	X		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: P.R-5 **Date:** 25 August 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

PR-5

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 (NO) — points = 0	Ø
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 (NO) multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	8

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	9
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	9

PR-5

[illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
X Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

Ø

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
X Occasionally flooded or inundated
X Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

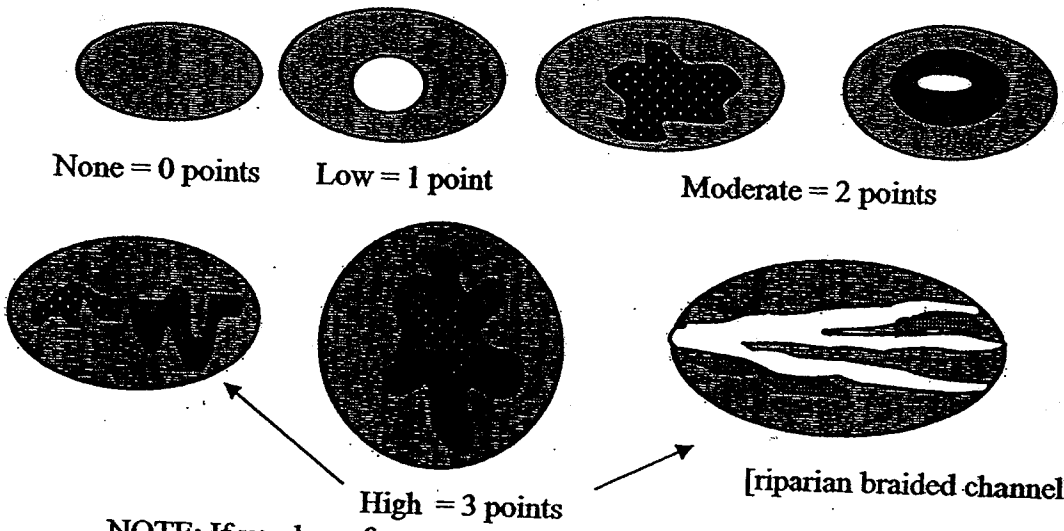
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

_X_ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

3

Comments

PR-5

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** X No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	2
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**	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?
(see text for a more detailed description of these priority habitats)

____**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.

X **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 0.5% 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

1

PR-5

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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	11

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): TD -1

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: NBH, WTK Affiliation: URS Corp Date of site visit: 29 July 2005

DRAFT 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	10
Score for Hydrologic Functions	9
Score for Habitat Functions	22
TOTAL score for functions	41

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	X
Bog		**Lake-fringe**	
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above	X		

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

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

Check List for Wetlands that Need Special Protection and that Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: TD-1 **Date:** 29 July 2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

TD-A

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality	
R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	2
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	8
R	*Add the points in the boxes above*	10
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	10

Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? ***(see p. 54)***	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	2
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	9
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p. 57)*** Answer YES if the wetland 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.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	9

Comments

TD-A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
__X__Emergent plants
__X__Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
__X__Seasonally flooded or inundated
____Occasionally flooded or inundated
__X__Saturated only
__X__ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

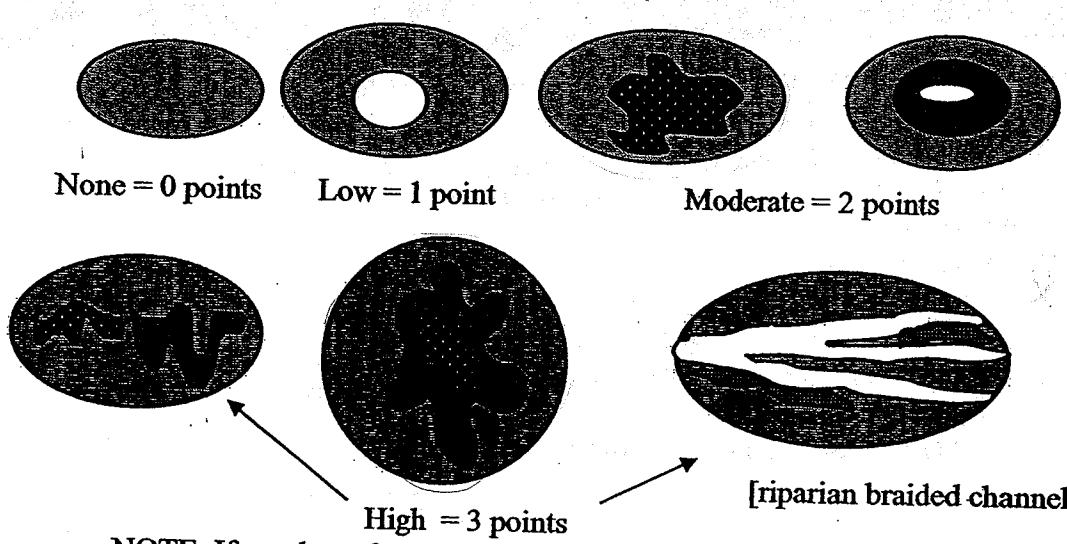
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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).

____ 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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

2

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

6

Comments

TD-A

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	4

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? *(see text for a more detailed description of these priority habitats)* X **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. X **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 0.5% 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	3

TD-A

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	16
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	22

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): TD-2

Location: SEC: ___ TWNSHP: __ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: NBH, WTK Affiliation: URS Corp Date of site visit: 29 July 2005.

DRAFT 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	8
Score for Hydrologic Functions	18
Score for Habitat Functions	26
TOTAL score for functions	52

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	X
Bog		**Lake-fringe**	
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above	X		

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

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

Check for the Wetlands that Need Special Protection that are not included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.	X	
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*	X	
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: TD- 2 **Date:** 7/29/2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

TD-B

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality	
R	**R 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 50)***	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland — points = 8 Depressions cover > 1/2 area of wetland — points = 4 Depressions present but cover < 1/2 area of wetland — points = 2 No depressions present — points = 0	2
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 ✓ Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	6
R	*Add the points in the boxes above*	8
R	**R 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 53)*** 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.* — 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 — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	8

Comments

R	**Riverine and Depressional Tidal Fringe Wetlands**	**Points**
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? ***(see p. 54)***	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	2
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.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	9
R	**R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p. 57)*** Answer YES if the wetland 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.* X There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 2
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	18

Comments

TD-B

These questions apply to wetlands of all HGM classes. Points

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
_X_Scrub/shrub (areas where shrubs have >30% cover)
_X_Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
_X_Seasonally flooded or inundated
_X_Occasionally flooded or inundated
____Saturated only
_X_Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

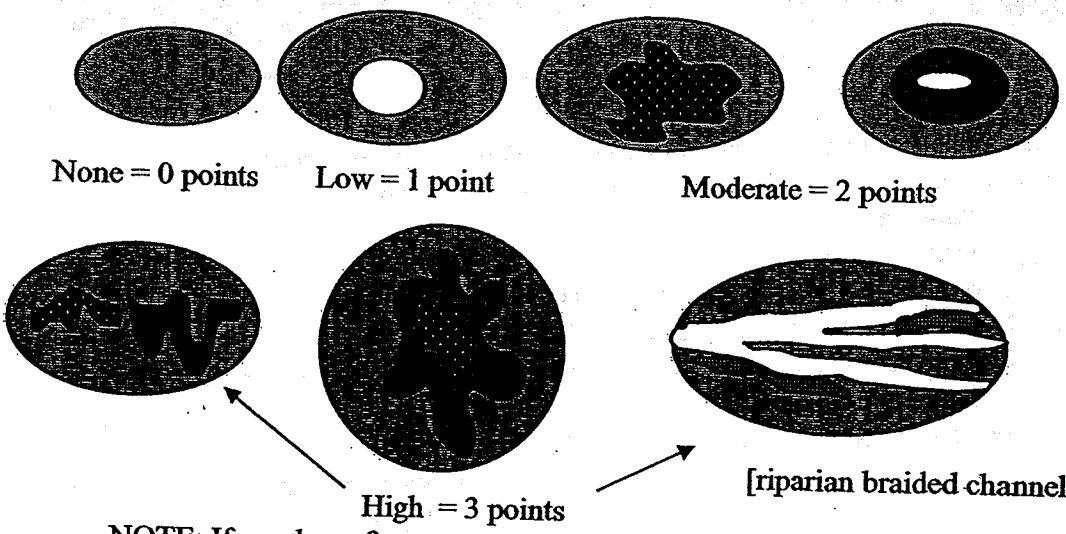
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

3

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).

X 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 for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

3

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

10

Comments

TO-R

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **Points = 5** X 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 = 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 three criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1**	4
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**	4

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? *(see text for a more detailed description of these priority habitats)* X **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. X **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 0.5% 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	3

TO-3

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	16
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	26

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): GCD-1

Location: SEC: ___ TWNSHP: ___ RNGE: ___ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: NBH JAW Affiliation: URS Date of site visit: 7/29/2005

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV X

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

Score for Water Quality Functions	6
Score for Hydrologic Functions	0
Score for Habitat Functions	22
TOTAL score for functions	28

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	
Bog		**Lake-fringe**	X
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above	X		

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

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

Check List for Wetlands That Need Special Protection and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal 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 been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		X
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: Glenn Canyon Dam **Date:** 7/29/2005

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   (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 wetland **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ___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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

L	**L 1. Does the wetland have the <u>potential</u> to improve water quality?** ***(see p. 59)***	
L	L 1.1 Average width of vegetation along the lakeshore : Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is more than 16 (5m) wide and <33ft — points = 3 Vegetation is more than 6ft (2m) wide and <16 ft — points = 1 Vegetation is less than 6 ft wide — points = 0	0
L	L 1.2 Characteristics of the vegetation in the wetland: *choose the appropriate description that results in the highest points, \and do not include any open water in your estimate of coverage. In this case the herbaceous plants can be either the dominant form (called emergent class) or as an understory in a shrub or forest community.* Herbaceous plants cover >90% of the vegetated area — points = 6 Herbaceous plants cover >2/3 of the vegetated area — points = 4 Herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed cover > 2/3 of the vegetated area — points = 0	6
L	*Add the points in the boxes above*	6
L	**L 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 61)*** Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. *Note which of the following conditions provide the sources of pollutants.* — Wetland is along the shores of a lake or reservoir that does not meet water quality standards — Grazing in the wetland or within 150ft — Polluted water discharges to wetland along upland edge — Tilled fields or orchards within 150 feet of wetland — Residential or urban areas are within 150 ft of wetland — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) — Power boats with gasoline or diesel engines use the lake — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
L	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from L1 by L2 ***Add score to table on p. 1***	6

Comments

L	Lake Fringe Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce shoreline erosion	
L	**L 3. Does the wetland have the <u>potential</u> to reduce shoreline erosion?** ***(see p. 62)***	
L	L 3 Average width and characteristics of vegetation along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 6 > ¾ of fringe vegetation is shrubs or trees at least 6 ft. (2 m) wide points = 4 > ¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 4 Fringe vegetation is at least 6 ft (2m) wide points = 2 Fringe vegetation is less than 6 ft (2m) wide points = 0	6
L	*Record the points from the box above*	0
L	**L 4. Does the wetland have the <u>opportunity</u> to reduce erosion?** ***(see p. 63)*** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* — There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. — There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other wetlands) than can be damaged by shoreline erosion — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
L	**TOTAL - Hydrologic Functions** Multiply the score from L 3 by L 4 ***Add score to table on p. 1***	0

Comments

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH - 1

Location: SEC: 2 TWNSHP: 36N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 2/2/06

DRAFT 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	10
Score for Hydrologic Functions	7
Score for Habitat Functions	11
TOTAL score for functions	28

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: _____ **Date:** _____

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

HABITAT FUNCTIONS

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
✓ Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
✓ Seasonally flooded or inundated
✓ Occasionally flooded or inundated
____Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

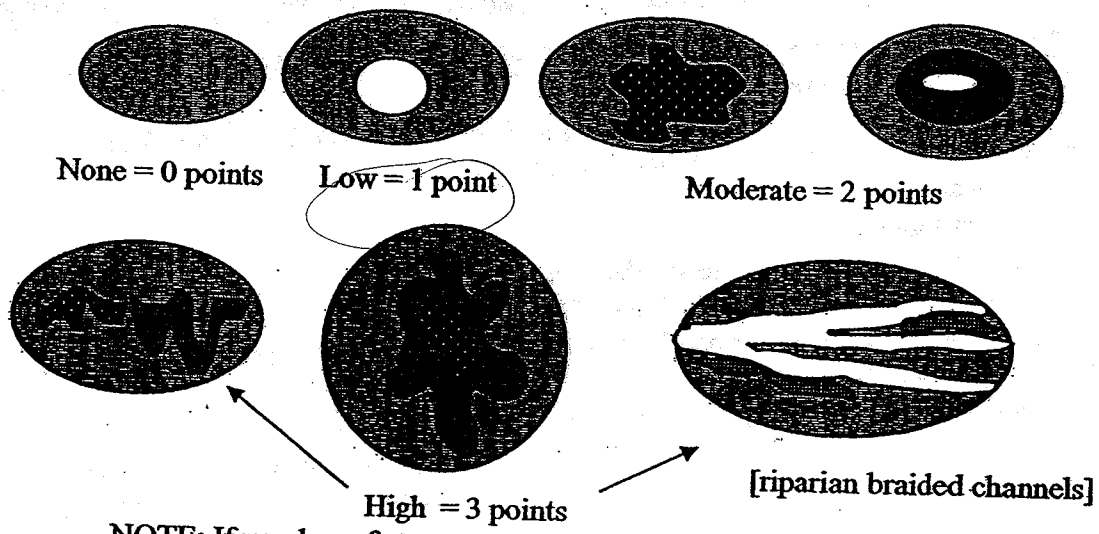
List species below if you want to:

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

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

0

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

3

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

3

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

2

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

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 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 in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	11

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D. Depressional and Flat Wetlands

WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality

D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	10
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
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 wetland functions to reduce flooding and stream degradation

		Points
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-2

Location: SEC: 2 TWNSHP: 30N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 2/2/06

DRAFT 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	7
Score for Hydrologic Functions	8
Score for Habitat Functions	6
TOTAL score for functions	21

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ **Does not Apply** ✓

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

Check the appropriate type and class of wetland being rated.

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	✓		

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

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

[illegible]	[illegible]	[illegible]
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: _____ **Date:** _____

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

[illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
__X__Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
__X__Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

0

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

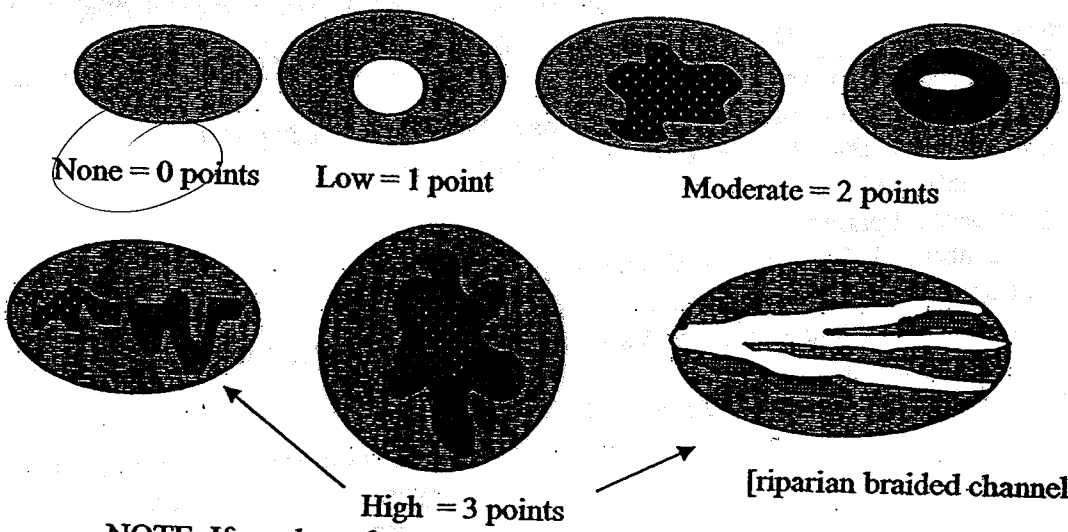
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

G

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

1

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

2

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**

0

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

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	
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 in the column above*	5
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	6

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	3
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	4
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland X A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 2
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	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	0
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	0
D	**Total for D 3** *Add the points in the boxes above*	0
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	0

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-3

Location: SEC: 2 TWNSHP: 30N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 2/2/06

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV_X_

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

Score for Water Quality Functions	7
Score for Hydrologic Functions	5
Score for Habitat Functions	7
TOTAL score for functions	19

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: _____ **Date:** _____

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

[illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
✓ Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
✓ Seasonally flooded or inundated
____Occasionally flooded or inundated
____Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland* = 2 points**
____ ***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

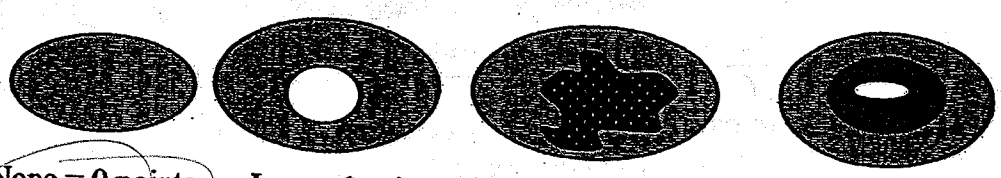
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

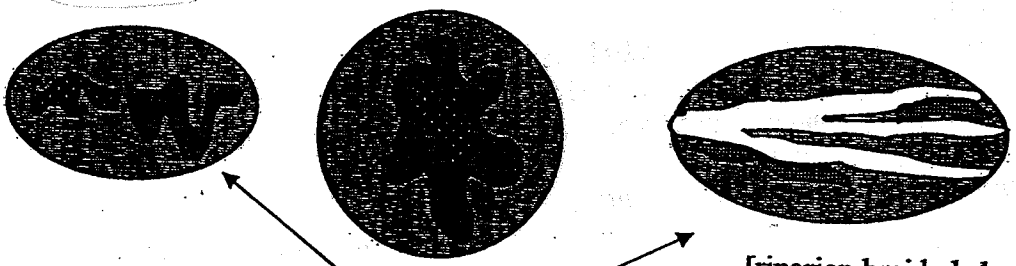
0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

2

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

X No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

2

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**

0

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

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 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 in the column above*	5
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	7

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D. Hydrologic Functions of Wetlands

WATER QUALITY FUNCTIONS - indicators that wetland functions to improve water quality

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	3
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	7
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	7

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	5
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	5

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-4

Location: SEC: 2 TWNSHP: 16N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 2/27/06

DRAFT 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	9
Score for Hydrologic Functions	10
Score for Habitat Functions	7
TOTAL score for functions	26

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: EH-4 **Date:** 2/2/06

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
✓ Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
✓ Seasonally flooded or inundated
____Occasionally flooded or inundated
✓ Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

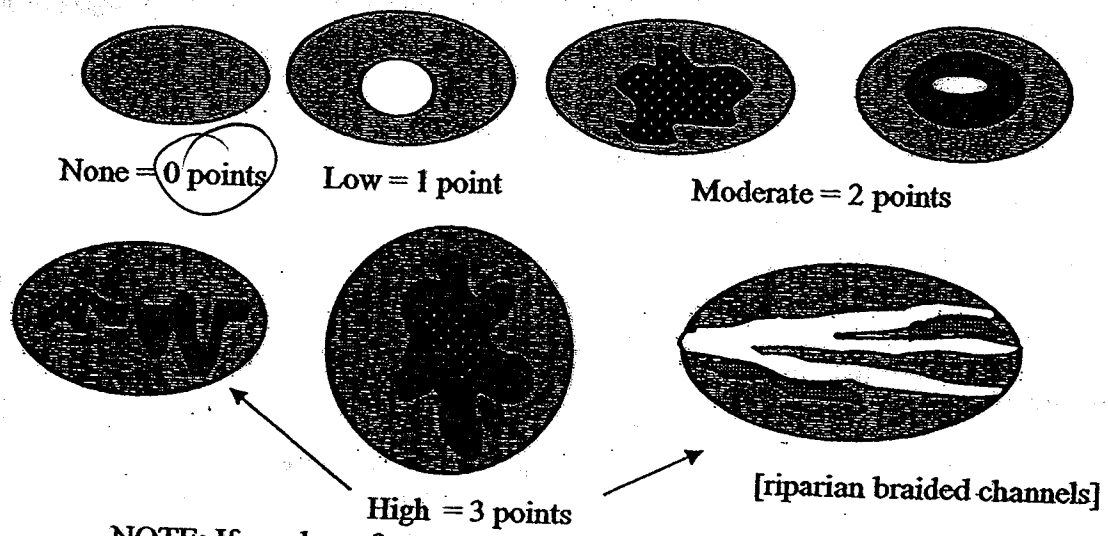
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

0

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

X Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

2

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

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	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	
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	5
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	7

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	9
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	9

D 3. Depressional and Flats Wetlands

HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation

		Points
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	3
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	10
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	10

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-5

Location: SEC: 2 TWNSHP: 30N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 2/2/06

DRAFT 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	10
Score for Hydrologic Functions	10
Score for Habitat Functions	10
TOTAL score for functions	30

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		✓
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		✓
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: EH-5 **Date:** February 2, 2006

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

[illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
__✓__Emergent plants
____Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

0

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
__✓__Seasonally flooded or inundated
____Occasionally flooded or inundated
__✓__Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

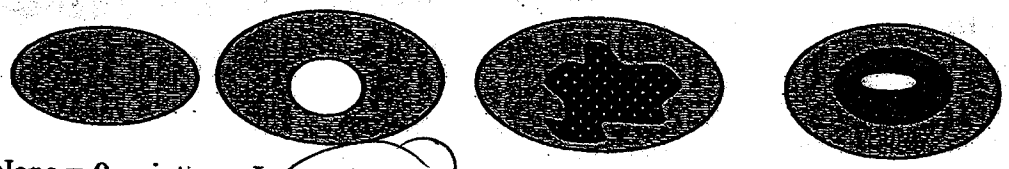
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

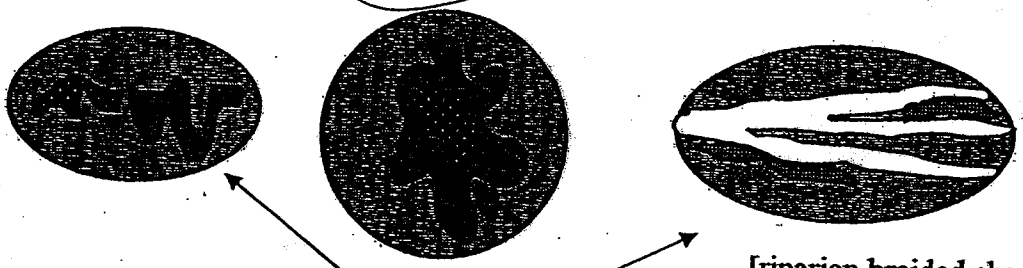
0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

__✓__Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

3

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

3

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

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

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 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 in the column above*	7
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	10

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check all the criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	10
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	10

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	3
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	10
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	10

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-6

Location: SEC: 2 TWNSHP: 31N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: Feb. 23, 2006

DRAFT 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	10
Score for Hydrologic Functions	7
Score for Habitat Functions	18
TOTAL score for functions	35

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: EH-6 **Date:** February 23, 2006

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
✓ Emergent plants
✓ Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
✓ Seasonally flooded or inundated
✓ Occasionally flooded or inundated
____Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland*** **= 2 points**
____***Freshwater tidal wetland*** **= 2 points**

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

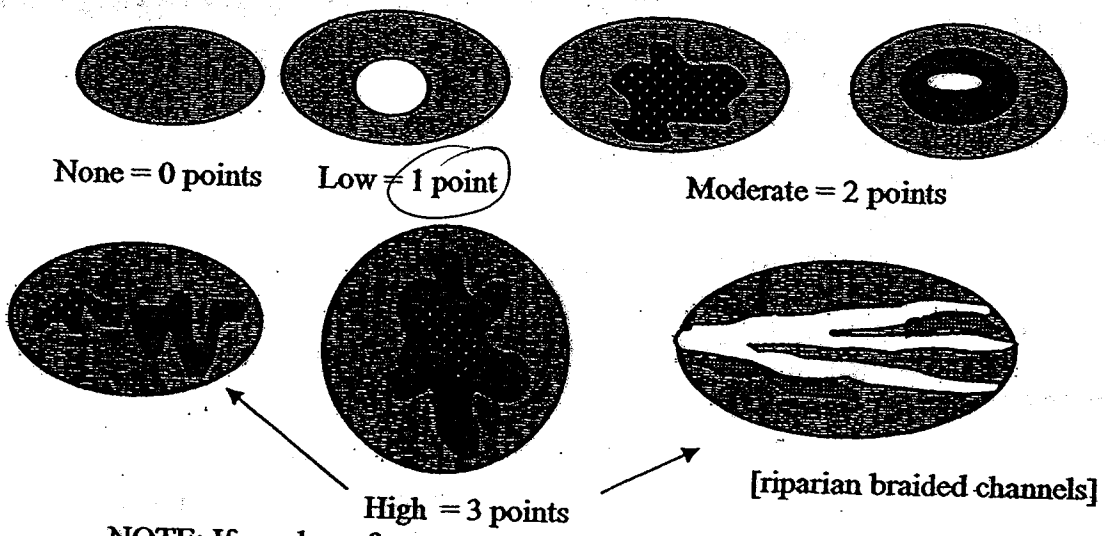
List species below if you want to:

If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

4

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

5

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**

4

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	14
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	18

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	2
D	**Total for D 1** *Add the points in the boxes above*	10
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	10

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-7

Location: SEC: 2 TWNSHP: 36N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: February 23, 2006

DRAFT 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	8
Score for Hydrologic Functions	7
Score for Habitat Functions	16
TOTAL score for functions	31

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

Criteria Listing Wetlands That Need Special Protection and Therefore Not Included in the Rating	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		✓
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		✓
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: EH-7 **Date:** February 23, 2006

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
✓ Emergent plants
✓ Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
✓ Occasionally flooded or inundated
✓ Saturated only

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

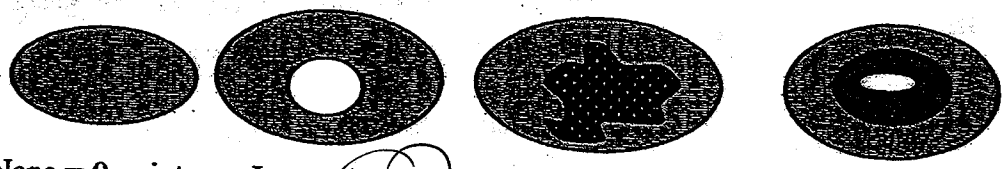
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

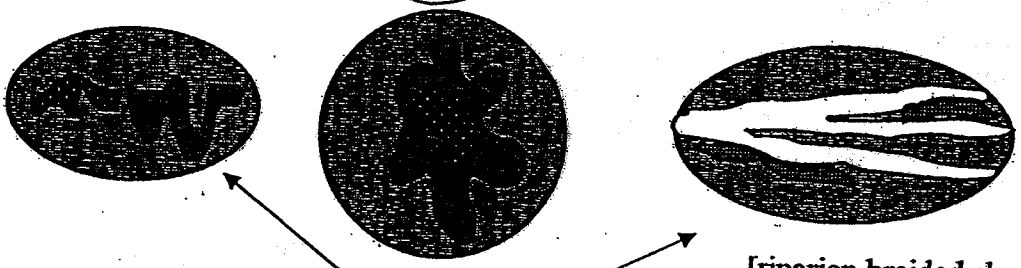
0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

4

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

5

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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**

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	16

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D. HYDROLOGIC FUNCTIONS of Wetlands

WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality

D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*		
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet Wetland has an intermittently flowing, or highly constricted, outlet Wetland has an unconstricted surface outlet Wetland is flat and has no obvious outlet and/or outlet is a ditch	 points = 3 points = 2 points = 1 points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES NO	 points = 4 points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest class): Wetland has persistent, ungrazed, vegetation >= 95% of area Wetland has persistent, ungrazed, vegetation >= 1/2 of area Wetland has persistent, ungrazed vegetation >= 1/10 of area Wetland has persistent, ungrazed vegetation <1/10 of area	 points = 5 points = 3 points = 1 points = 0	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.* Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland NOTE: *See text for indicators of seasonal and permanent inundation..*	 points = 4 points = 2 points = 0	0
D	**Total for D 1** *Add the points in the boxes above*		8
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1		multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*		8

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-8

Location: SEC: 2 TWNSHP: 30N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: February 23, 2006

DRAFT 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	8
Score for Hydrologic Functions	7
Score for Habitat Functions	16
TOTAL score for functions	31

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: E14-8 **Date:** February 23, 2006

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

HABITAT FUNCTIONS – [illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

- ____Aquatic bed
- ✓ Emergent plants
- ✓ Scrub/shrub (areas where shrubs have >30% cover)
- ____Forested (areas where trees have >30% cover)
- ____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

(

H 1.2. Hydroperiods *(see p. 73)*

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

- ____Permanently flooded or inundated
- ____Seasonally flooded or inundated
- ✓ Occasionally flooded or inundated
- ✓ Saturated only
- ____ Permanently flowing stream or river in, or adjacent to, the wetland
- ____ Seasonally flowing stream in, or adjacent to, the wetland
- ____ ***Lake-fringe wetland*** **= 2 points**
- ____ ***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

/

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

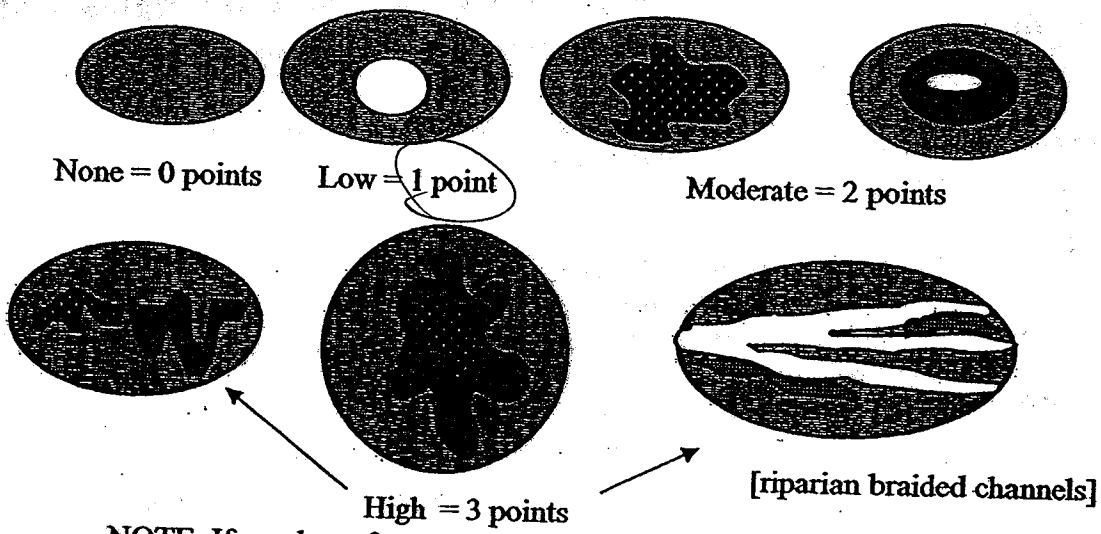
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

4

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

5

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	16

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D	**D 1. Does the wetland 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: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the <u>opportunity</u> to improve water quality?** ***(see p. 44)*** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
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**	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	7
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	7

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-9

Location: SEC: 2 TWNSHP: 36N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: Feb. 23, 2006

DRAFT 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	7
Score for Hydrologic Functions	5
Score for Habitat Functions	16
TOTAL score for functions	28

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: EH-9 **Date:** February 23, 2016

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

[illegible]

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
__✓__Emergent plants
__✓__Scrub/shrub (areas where shrubs have >30% cover)
____Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
____Seasonally flooded or inundated
__✓__Occasionally flooded or inundated
__✓__Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Seasonally flowing stream in, or adjacent to, the wetland
____***Lake-fringe wetland* = 2 points**
____***Freshwater tidal wetland* = 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

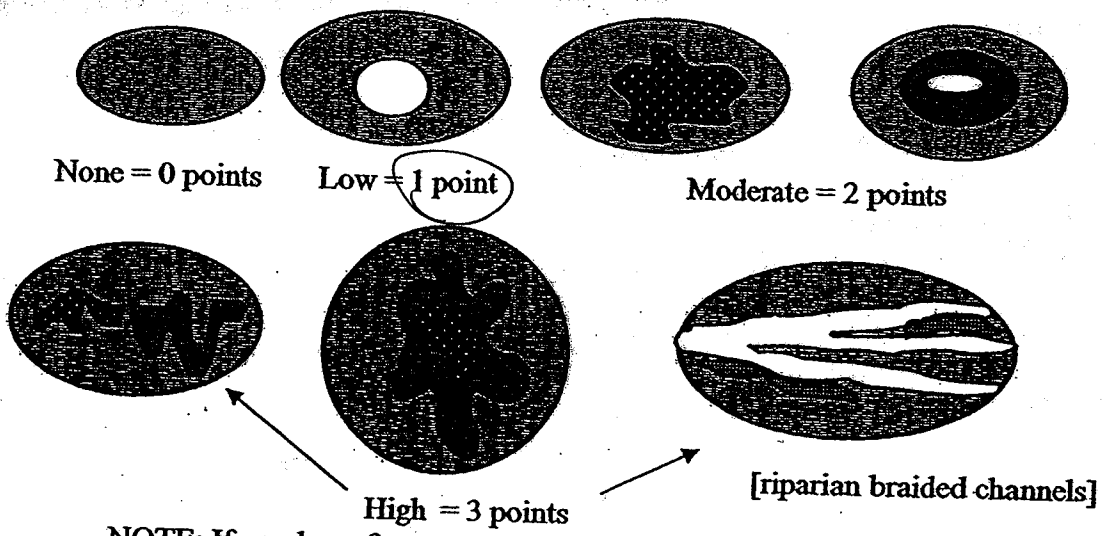
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

1

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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

4

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

5

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	16

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Name or Number	Rating
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	0
D	**Total for D 1** *Add the points in the boxes above*	7
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	7

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	5
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	5

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-10

Location: SEC: 2 TWNSHP: 30N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Waller Affiliation: URS Date of site visit: 2/23/06

DRAFT 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	12
Score for Hydrologic Functions	12
Score for Habitat Functions	20
TOTAL score for functions	44

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: EH-10 **Date:** February 23, 2006

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded?**
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

- ✓ Aquatic bed
- ✓ Emergent plants
- ✓ Scrub/shrub (areas where shrubs have >30% cover)
- ___ Forested (areas where trees have >30% cover)
- ___ Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

2

H 1.2. Hydroperiods *(see p. 73)*

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

- ✓ Permanently flooded or inundated
- ✓ Seasonally flooded or inundated
- ___ Occasionally flooded or inundated
- ✓ Saturated only
- ___ Permanently flowing stream or river in, or adjacent to, the wetland
- ___ Seasonally flowing stream in, or adjacent to, the wetland
- ___ ***Lake-fringe wetland*** **= 2 points**
- ___ ***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

2

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

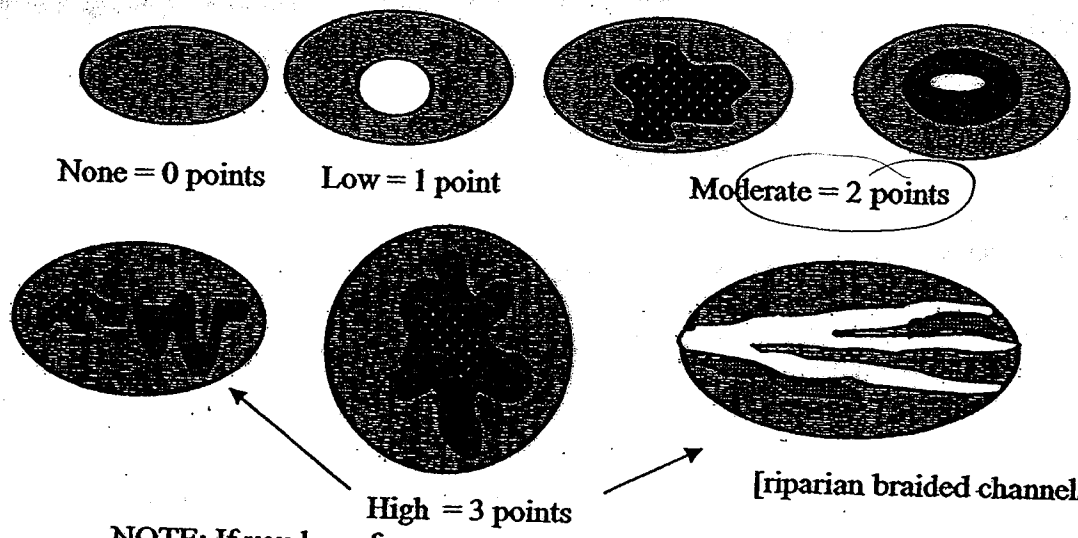
List species below if you want to:

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

1

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

____Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

8

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

5

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

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 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	12
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	20

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type [illegible]	Category
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	4
D	**Total for D 1** *Add the points in the boxes above*	12
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other _____ YES multiplier is 2 (NO) multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	12

D	**Depressional and Flats Wetlands**	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	5
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	12
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	12

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): EH-11

Location: SEC: 2 TWNSHP: 30N RNGE: 7W (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: J. Walker Affiliation: URS Date of site visit: 2/23/06

DRAFT 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	8
Score for Hydrologic Functions	12
Score for Habitat Functions	14
TOTAL score for functions	34

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ **Does not Apply** ✓

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

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	✓		

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

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

[illegible]	YES	NO
SP1. *Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		
SP3. *Does the wetland contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland 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 Vegetated Wetlands for Western Washington

Wetland Name: EH-11 **Date:** February 23, 2006

1. Are the water levels in the wetland 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. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.
   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 wetland **meet both** of the following criteria?
   ____The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
   ____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 wetland **meet all** of the following criteria?
   ____The wetland is on a slope (*slope can be very gradual*),
   ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ____The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these 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. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland 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 wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

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

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. 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 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

HABITAT FUNCTION

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)*

Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.

____Aquatic bed
____Emergent plants
✓ Scrub/shrub (areas where shrubs have >30% cover)
✓ Forested (areas where trees have >30% cover)
____Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)

Add the number of vegetation types that qualify. If you have:

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

1

H 1.2. Hydroperiods *(see p. 73)*

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

____Permanently flooded or inundated
✓ Seasonally flooded or inundated
____Occasionally flooded or inundated
✓ Saturated only
____ Permanently flowing stream or river in, or adjacent to, the wetland
____ Seasonally flowing stream in, or adjacent to, the wetland
____ ***Lake-fringe wetland*** **= 2 points**
____ ***Freshwater tidal wetland*** **= 2 points**

4 or more types present	points = 3
3 types present	points = 2
2 types present	point = 1

1

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

List species below if you want to:

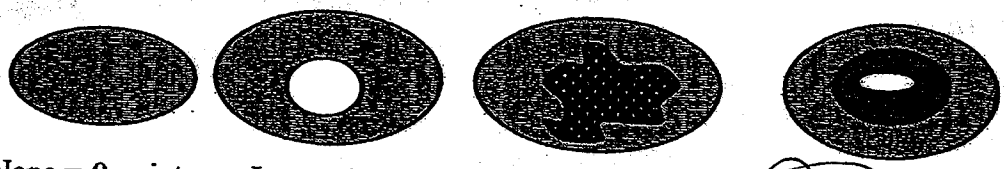
If you counted:

> 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

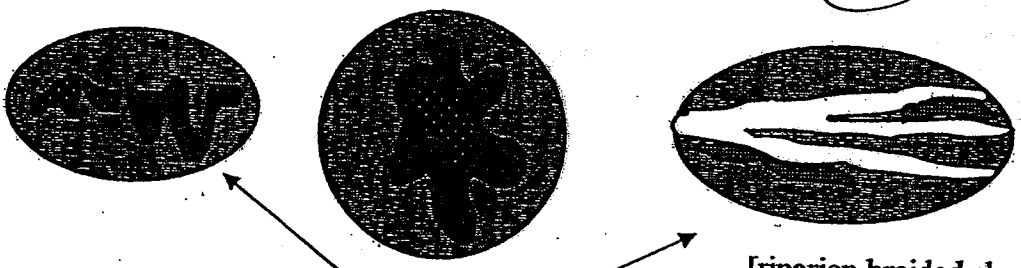
0

H 1.4. Interspersion of habitats *(see p. 76)*

Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

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

2

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

____Large, downed, woody debris within the wetland (>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 for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

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

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

1

H 1. TOTAL Score - potential for providing habitat

Add the scores in the column above

5

Comments

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)*

Choose the description that best represents condition of buffer of wetland. 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 developed areas within undisturbed part of buffer. **(relatively undisturbed also means no-grazing)** **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 = 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 three criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

— Buffer does not meet any of the criteria above. **Points = 1**

4

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**

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?
(see text for a more detailed description of these priority habitats)

____**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 0.5% 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

0

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 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 in the column above*	9
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check all any criteria that apply to the wetland. Circle the appropriate Category when the appropriate criteria are met.*	Category
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

D	**D 1. Does the wetland have the potential to improve water quality?** *(see p. 38)*	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet — points = 3 Wetland has an intermittently flowing, or highly constricted, outlet — points = 2 Wetland has an unconstricted surface outlet — points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch — points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES — points = 4 NO — points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest 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	1
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 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 NOTE: *See text for indicators of seasonal and permanent inundation..*	4
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland have the opportunity to improve water quality?** *(see p. 44)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	8

	D 3. Does the wetland 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 Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	4
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet* Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	5
D	D 3.3 Contribution of wetland 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 itself.* The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class.(basin = the wetland, by definition) points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	12
D	**D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *(see p. 49)* Answer YES if the wetland is in a location in the watershed where 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. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ YES multiplier is 2 NO multiplier is 1	multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	12

APPENDIX C

PHOTOS

22238052_01.cdr

Photograph 1
Hatchery outfall looking upstream at culvert

Photograph 2
Hatchery outfall north fork adjacent to federal levee

Photograph 3
Looking upstream toward gully from levee access road

Photograph 4
Looking downstream from gully at levee access road

Job No. 22238052

Appendix C
Photos

22238052_01.cdr

Photograph 5
Looking downstream at alluvial fan

Photograph 6
Looking downstream at alluvial fan

Photograph 7
Sediment deposit in alluvial fan

Photograph 8
Elwha Heights Talent ditch north of
Walker Ranch Road

22238052_01.cdr

Photograph 9
Elwha River Road Talent ditch south side of road looking east

Photograph 10
Sampson Road Talent ditch looking downstream

Photograph 11
Sampson Road Talent ditch culvert

Photograph 12
Sampson Road Talent ditch ends before the Elwha River

22238052_01.cdr

Photograph 13
Elwha Flood Channel

Photograph 14
Elwha Dam Talent ditch

Photograph 15
Griff Creek culvert replacement
looking upstream