Critical Areas Study East Lake Sammamish Master Plan Trail South Sammamish Segment B

Prepared for



October 2016

Prepared by Parametrix

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CITATION

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ACRONYMS AND ABBREVIATIONS

BMP	best management practice
AASHTO	American Association of State Highway and Transportation Officials
BNSF	Burlington Northern Santa Fe
CARAs	critical aquifer recharge areas
CAS	Critical Areas Study
cfs	cubic feet per second
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FWHCAs	Fish and Wildlife Habitat Conservation Areas
GIS	geographic information system
LWD	large woody debris
Master Plan Trail	East Lake Sammamish Master Plan Trail
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
RCW	Revised Code of Washington
RM	river mile
SMC	Sammamish Municipal Code
SMP	Shoreline Master Program
TDAs	threshold discharge areas
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington State Department of Natural Resources
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

1. INTRODUCTION

1.1 Project Overview

King County is proposing to develop the East Lake Sammamish Master Plan Trail (Master Plan Trail)—an approximately 11-mile regional multi-user trail and nonmotorized alternative transportation corridor located near the eastern shore of Lake Sammamish. The entire project site is located along the existing Interim Use Trail in the King County right-of-way that extends from Gilman Boulevard in Issaquah to Bear Creek in Redmond. The Interim Use Trail is located on the alignment of the former Burlington Northern Santa Fe (BNSF) railroad that began operations in 1855 and ceased operations along this corridor in 1996. King County acquired the rail-banked corridor in 1998 and completed construction of the Interim Use Trail in 2006.

Proposed improvements of the Master Plan Trail will be constructed in multiple segments—Redmond, Issaquah, North Sammamish, and South Sammamish (Segments A and B). The Redmond Segment of the trail was constructed in 2011, the Issaquah Segment in 2012/2013, the North Sammamish Segment in 2014/2015, and the South Sammamish Segment A is currently in the permitting process. The South Sammamish Segment B of the proposed trail is the focus of this report, scheduled for construction in 2018. This trail segment is approximately 3.5 miles, extending from SE 33rd Street to Kokomo Drive (vicinity of Inglewood Hill Road) (Figure 1-1).

An existing gravel trail (i.e., the Interim Use Trail) is located in the project corridor. The Master Plan Trail will be the "full" buildout of the trail and will replace the existing soft-surface Interim Use Trail along a similar alignment. The Interim Use Trail is typically 8 to 12 feet wide and will be widened to accommodate the Master Plan Trail, which is typically 12 feet of pavement bounded by two 2-foot-wide shoulders and 1-foot-wide clear zones, in accordance with American Association of State Highway and Transportation Officials (AASHTO) guidelines. The project will include:

- Construction of a 12-foot-wide paved regional trail with soft-surface (gravel) shoulders;
- Related earthwork;
- Drainage improvements related to the trail;
- Culvert replacements to improve fish passage;
- Retaining walls and other site improvements;
- Landscaping and fencing; and
- Access and traffic control (bollards, striping, signage, etc.).

The Master Plan Trail will provide a paved multi-use trail for bicyclists, pedestrians, and others between cities within the Urban Growth Area—Issaquah, Sammamish, and Redmond. The trail will provide an off-road facility and route as a nonmotorized alternative to surrounding congested arterials. As a result, the project will promote nonmotorized access to employment, retail, and recreation centers within the city of Sammamish as well as provide a regional link with Redmond, Issaquah, and other cities and regional growth centers as an important component of the Regional Trails System.

The South Sammamish Segment B of the Master Plan Trail is part of the expanding Regional Trails System that provides a network of off-road, multi-use, nonmotorized transportation facilities used by thousands of bicyclists, pedestrians, and others daily for commuting to work or school, local travel, and recreation.

The existing Regional Trails System now comprises approximately 300 miles of alternative transportation corridors. The Master Plan Trail is among the most significant of these due to its strategic location within King County, its length, and its connections via urban centers, city centers, and many land uses (residential, commercial, retail, professional, institutional, government, historic districts, and recreation areas). The Master Plan Trail extends the Burke-Gilman and Sammamish River Trails to create a 42-mile regional alternative transportation corridor stretching from Seattle to Issaquah and beyond to the Cascades. This project is an important part of that extension. The South Sammamish Segment B will provide many direct local benefits, including a connection to the new Sammamish Landing Park. The Master Plan Trail also will link with other regional trails.

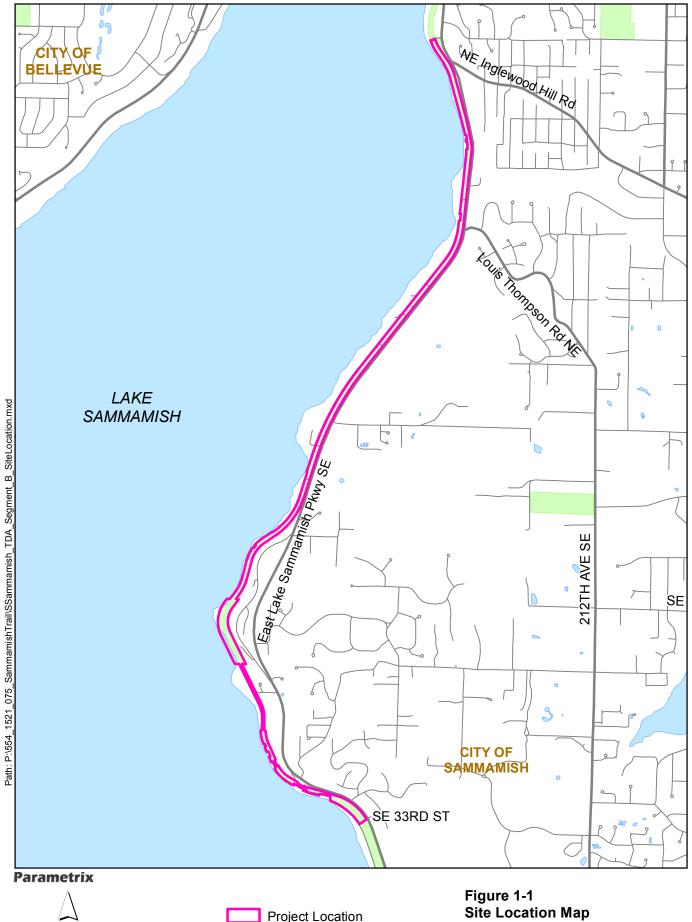
1.2 Purpose of Report

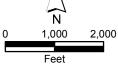
According to the City of Sammamish Environmentally Critical Areas Regulations, an applicant for a development proposal shall submit a Critical Areas Study (CAS) where impacts to or alteration of an environmentally critical area is proposed or may occur as a consequence of proposed actions (Sammamish Municipal Code [SMC] 21A.50.120). King County is proposing an alignment that follows the existing Interim Use Trail, which is also the location of a former railbed. The proposed project is consistent with City trail corridor development standards (SMC 21A.30.210(1)—Use of Existing Corridors) that state trails should generally be located along existing cleared areas or on improved corridors. This is also consistent with the City's regulations regarding permitted alterations to wetlands and streams (SMC 21A.50.300(10); SMC 21A.50.340(7)). These regulations state that the use of existing crossings, including but not limited to utility corridors, road and railroad rights-of-way within wetlands, streams, or buffers for public or private trails, is preferred to new crossings, subject to the standards and requirements in the SMC.

This CAS has been prepared to satisfy these City of Sammamish requirements by describing wetlands, streams, Fish and Wildlife Habitat Conservation Areas (FWHCAs), and critical aquifer recharge areas (CARAs) within the project area; evaluating potential impacts on these critical areas from the proposed trail; and presenting mitigation for these impacts. Other critical areas regulated by the City of Sammamish, such as landslide hazard areas or erosion and seismic hazard areas, are not addressed in this CAS. Information presented herein is intended to facilitate environmental review and permitting.

1.3 Project Area

The project area is a linear corridor in the King County right-of-way along the eastern shore of Lake Sammamish within the city of Sammamish that closely parallels East Lake Sammamish Parkway NE (to the east) for much of the corridor, between the city's south boundary near SE 33rd Street to Kokomo Drive (vicinity of Inglewood Hill Road). The right-of-way varies from 50 to 200 feet in width along the trail. The South Sammamish Segment B is located in Sections 6, 7, and 8 in Township 24 North, Range 6 East, Willamette Meridian and Sections 29, 31, and 32 in Township 25 North, Range 6 East, Willamette Meridian. The project corridor is a former railroad right-of-way, surrounded by single-family residential land use. The project area includes 37 wetlands and 18 streams.





Project Location

East Lake Sammamish Trail South Sammamish - Segment B

2. METHODS

This report is based on a review of existing information and field investigations. The goal of these efforts is to collect and document existing information that reflects current site conditions for assessing potential impacts.

2.1 Review of Existing Literature

Prior to conducting fieldwork, and throughout the duration of project design, biologists reviewed existing information to identify wetlands, streams, vegetation patterns, topography, soils, wildlife habitats, and other natural resources in the project area. Existing data sources that were reviewed for this report included but were not limited to the following:

- City of Sammamish critical area maps
- Soil Survey of King County Area, Washington. U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) (Snyder et al. 1973)
- National Wetlands Inventory (NWI), online wetlands mapper (U.S. Fish and Wildlife Service [USFWS] 2013)
- A Catalog of Washington Streams and Salmon Utilization, Volume 1, Puget Sound Region (Williams et al. 1975)
- SalmonScape online mapping tool (Washington Department of Fish and Wildlife [WDFW] 2016a)
- Final East Lake Sammamish Basin and Nonpoint Action Plan (King County 1994)
- Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin (Kerwin 2001)
- East Lake Sammamish Master Plan Trail Fish and Fish Habitat Technical Report (Parametrix 2006)
- East Lake Sammamish Master Plan Trail Wetland Biology Discipline Report (Parametrix 2005)
- Online Priority and Habitat Species listed by the Washington Department of Fish and Wildlife (WDFW 2016b)
- List of Sections That Contain Natural Heritage Features (Washington State Department of Natural Resources [WDNR] 2016)
- Draft Biological Assessment for the East Lake Sammamish Trail Master Plan (Parametrix 2007)
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies

2.2 Field Investigation

Wetland and stream field investigations were initially conducted in 1999 and 2000 to identify and delineate wetlands and streams as part of the East Lake Sammamish Master Plan Trail Final Environmental Impact Statement (King County 2010). Project biologists re-delineated wetlands and streams in November and December 2007; January, March, and April 2008; and January 2009 to identify and document current resource conditions in the project corridor (since more than 5 years had lapsed). The King County Department of Permitting and Environmental Review (formerly Department of

Development and Environmental Services) biologist reviewed the wetlands in Sammamish in the winter of 2008/2009. Wetlands and streams within the South Sammamish Segments were re-evaluated and/or verified by project biologists in 2013 and 2014 to update any areas where changes may have occurred due to recent development or natural conditions in the project vicinity since 2008. New wetland boundaries were delineated and flagged only where there was a change in conditions. If conditions remained the same, no changes to the boundary were made. Recent field observations are documented in this report.

2.3 Wetland Identification

Biologists delineated wetlands in 2007/2008/2009 according to the methods specified in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory 1987). At that time, these methods complied with those in the Washington State Wetland Identification and Delineation Manual (Washington State Department of Ecology [Ecology] 1997).

Biologists re-evaluated wetlands in 2013/2014 according to the methods specified in the USACE's Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010). These methods comply with those adopted by Washington State pursuant to Washington Administrative Code (WAC) 173-22-035, Revised Code of Washington (RCW) 90.58.380, and the City of Sammamish under SMC 21A.15.1415.

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include, but are not limited to, swamps, marshes, bogs, and similar areas. An area must have at least one positive indicator of wetland vegetation, soils, and hydrology to be considered a wetland. The delineated wetlands were instrument-surveyed by professional land surveyors. Wetland determination data forms were recorded for each wetland (Appendix A).

2.3.1 Vegetation

The dominant plants and their wetland indicator status were evaluated to determine whether the vegetation is hydrophytic. Hydrophytic vegetation is generally defined as vegetation adapted to prolonged saturated soil conditions. To meet the hydrophytic vegetation criterion, more than 50 percent of the dominant plants must be facultative, facultative wetland, or obligate, according to the plant indicator status category assigned to each plant species by the USACE National Wetland Plant List (Lichvar et al. 2014). Table 2-1 provides the definitions of the indicator status categories. The scientific and common names for plants follow the currently accepted nomenclature. Dominant plant species were observed and recorded on wetland determination data forms for each data plot (Appendix A).

Plant Indicator Status Category	Symbol	Definition	
Obligate Wetland Plants	OBL	Plants that almost always (>99% of the time) occur in wetlands but may rarely (<1% of the time) occur in non-wetlands	
Facultative Wetland Plants	FACW	Plants that often (67% to 99% of the time) occur in wetlands but sometimes (1% to 33% of the time) occur in non-wetlands	
Facultative Plants	FAC	Plants with a similar likelihood (33% to 66% of the time) of occurring in both wetlands and non-wetlands	
Facultative Upland Plants	FACU	Plants that sometimes (1% to 33% of the time) occur in wetlands but occur more often (67% to 99% of the time) in non-wetlands	
Upland Plants	UPL	Plants that rarely (<1% of the time) occur in wetlands and almost always (> 99% of the time) occur in non-wetlands	

Table 2-1. Key to Plant Indicator Status Categories

Source: Environmental Laboratory (1987).

2.3.2 Soils

Generally, an area must have hydric soils to be considered a wetland. Hydric soil forms when soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper portion. Biological activities in saturated soil result in reduced concentrations of oxygen that in turn result in a preponderance of organisms that use anaerobic processes for metabolism. Over time, anaerobic biological processes result in certain soil color patterns, which are used as indicators of hydric soil. Typically, low-chroma colors are formed in the matrix of hydric soil. Bright-colored redoximorphic features form within the matrix under a fluctuating water table. Other important hydric soil indicators include organic matter accumulations in the surface layer, reduced sulfur odors, and organic matter staining in the subsurface. Soils were examined by excavating sample pits to a depth of 18 inches or more to observe the soil profiles, colors, and textures. Munsell color charts (GretagMacbeth 2000) were used to describe the soil colors.

2.3.3 Hydrology

The project area was examined for evidence of hydrology. An area is considered to have wetland hydrology when soils are ponded or saturated consecutively 12.5 percent of the growing season. Primary indicators of hydrology include surface inundation and saturated soils. Secondary indicators of hydrology include drainage patterns and water-stained leaves.

2.4 Wetland Classification and Rating

Delineated wetlands were classified according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). Hydrogeomorphic classifications were assigned to wetlands using USACE methods established in A Hydrogeomorphic Classification for Wetlands (Brinson 1993). In accordance with SMC 21A.50.290, wetlands were rated using the revised Washington State Wetland Rating System for Western Washington (Hruby 2004) (Appendix B).

The standard buffer widths for the wetlands in the project area are those required under SMC 21A.50.290(2) (Table 2-2).

Wetland Category		Standard Buffer Width (feet)	
Category I	Natural Heritage or bog wetlands	215	
	Habitat score 29 – 36	200	
	Habitat score 20 – 28	150	
	Not meeting above criteria	125	
Category II	Habitat score 29 – 36	150	
	Habitat score 20 – 28	100	
	Not meeting above criteria	75	
Category III	Habitat score 20 – 28	75	
	Not meeting above criteria	50	
Category IV		All land use types – 50	
Category III and IV		Subject to SMC 21A.50.320	

Table 2-2. City of Sammamish Standard Wetland Buffer Widths

Source: SMC 21A.50.290(2)

2.5 Wetland Functions

Functions of individual project area wetlands delineated by Parametrix were assessed using the Washington State Department of Transportation (WSDOT) Wetland Functions Characterization Tool for Linear Projects (Null et al. 2000). This is a qualitative tool designed for linear projects to enable the rapid documentation and characterization of functions and values of a particular wetland. This method allows evaluation of wetland functions using best professional judgment and readily observed environmental characteristics. For example, an area of permanent open water is characteristic of a wetland that provides habitat for waterfowl or aquatic animals. The upland habitats and buffers surrounding wetlands were also considered in the evaluation because adjacent land uses affect the performance of wetland functions. Biologists reviewed the indicator characteristics present for each affected wetland and assigned a summary rating of low, low-moderate, moderate, moderate-high, or high for each wetland function (Appendix C). Table 2-3 lists the wetland functions and values evaluated.

Flood Flow Alteration	Habitat for Amphibians
Sediment Removal	Habitat for Wetland-Associated Mammals
Nutrient and Toxicant Removal	Habitat for Wetland-Associated Birds
Erosion Control and Shoreline Stabilization	General Fish Habitat
Production of Organic Matter and its Export	Native Plant Richness
General Habitat Suitability	Educational or Scientific Value
Habitat for Aquatic Invertebrates	Uniqueness and Heritage

Table 2-3. Wetland Functions and Values Assessed

2.6 Stream Identification and Classification

Streams are defined as those areas in the city where surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or stormwater runoff conveyance devices, or other entirely artificial watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction of such watercourses (SMC 21A.15.1240). For the purpose of this study, a defined channel or bed is an area that demonstrates clear evidence of the passage of water

and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and definedchannel swales. The channel or bed need not contain water year-round. The ordinary high water mark (OHWM) of project area streams was identified and instrument-surveyed by professional land surveyors. Stream data were based on the 2006 East Lake Sammamish Master Plan Trail Fish and Fish Habitat Technical Report (Parametrix 2006) and observations made during subsequent field investigations. These data have also assisted in determining where fish passage improvements are recommended.

Streams were classified according to City of Sammamish regulations (SMC 21A.15.1240) and the Washington State water typing system. Stream type determinations were also informed by determinations of presumed fish use according to WAC 222-16-031 and SMC 21A.15.1240. The types were applied to the stream reaches located within the project area. Buffer widths assigned to streams reflect standard buffer requirements in SMC 21A.50.330(1) (Table 2-4).

Stream Type	Standard Buffer Width (feet)		
Type S	150		
Type F	150		
Туре Np	75		
Type Ns	50		

Source: SMC 21A.50.330

2.7 Lake Sammamish

Portions of the project area are within 200 feet of Lake Sammamish, placing it within the shoreline jurisdiction. The City of Sammamish Shoreline Master Program (SMP) provides the goals, policies, and regulations for use and development within the shoreline area. According to SMC 25.06.020(9), a 50-foot shoreline setback (extending from the OHWM) is established for Lake Sammamish.

The OHWM for Lake Sammamish was not field-delineated for this project because it was outside of the trail right-of-way and will not be directly affected. Instead, King County 2010 open water geographic information system (GIS) data were used to determine the OHWM and shoreline setback area.

2.8 Fish and Wildlife Habitat Conservation Areas

According to SMC 21A.15.468, the City of Sammamish defines FWHCAs as those areas that are essential for the preservation of critical habitats and species. All areas within the city of Sammamish meeting one or more of the following criteria are designated FWHCAs:

- (1) Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association.
 - (a) Federally designated endangered and threatened species are those fish and wildlife species identified by the USFWS and the National Marine Fisheries Service (NMFS) that are in danger of extinction or are threatened to become endangered. The USFWS and the NMFS should be consulted as necessary for current listing status;
 - (b) State-designated endangered, threatened, and sensitive species are those fish and wildlife species native to the coastal region of the Pacific Northwest identified by the WDFW that are in danger of extinction, threatened to become endangered, vulnerable, or declining and are likely to become endangered or threatened in a significant portion of their range

within the state without cooperative management or removal of threats. State-designated endangered, threatened, and sensitive species are periodically recorded in WAC 232-12-014 (state endangered species), and WAC 232-12-011 (state threatened and sensitive species). WDFW maintains the most current listing and should be consulted as necessary for current listing status;

- (2) Wetlands, streams, and lakes;
- (3) State natural area preserves and natural resource conservation areas. Natural area preserves and natural resource conservation areas are defined, established, and managed by the WDNR; and
- (4) Fish and wildlife habitat corridors as defined in SMC 21A.15.469.

2.9 Critical Aquifer Recharge Areas

According to SMC 21A.15.253, the City of Sammamish defines CARAs as those areas with a critical recharging effect on aquifers used for potable water as defined by WAC 365-190-030(2). CARAs have prevailing geologic conditions associated with infiltration rates that create a high potential for contamination of groundwater resources or contribute significantly to the replenishment of groundwater. CARAs are classified based on the following criteria:

- (1) Class 1 CARAs include those areas located within the mapped 1- or 5-year capture zone of a wellhead protection area.
- (2) Class 2 CARAs include those areas located within the mapped 10-year capture zone of a wellhead protection area.
- (3) Class 3 CARAs include those areas outside wellhead protection areas that are identified as high aquifer recharge potential areas based on characteristics of surficial geology and soil types.

2.10 Impact Assessment

Impacts on wetlands, streams, and buffers (including shoreline setback) were assessed by overlaying the proposed design onto project base maps showing wetland, stream, and buffer locations. Impact areas were determined as the area of intersection between the proposed design and the base maps. This assessment also considered loss of wetland and stream function (based on the amount of clearing, filling, and/or excavation as a result of the project) and other direct and indirect impacts on wetlands and streams.

3. RESULTS

The following sections describe critical areas in the project limits. Also included are descriptions of individual wetlands, streams, and FWHCAs identified in the project area.

3.1 Landscape Setting

This trail project alignment roughly parallels the eastern shoreline of Lake Sammamish (to the west) and East Lake Sammamish Parkway (to the east) in the East Lake Sammamish Basin, which is in the Upper Sammamish River Drainage in the Cedar/Sammamish Watershed (Water Resource Inventory Area [WRIA] 8) (Williams et al. 1975; Ecology 2008). Streams in the East Lake Sammamish Basin generally originate in wetlands located on the Sammamish Plateau, and drain west through steep ravines to Lake Sammamish. This basin is further divided into several small subbasins. South Sammamish Segment B is within the Monohon, Pine Lake, Thompson, Inglewood, and Panhandle subbasins (Figure 3-1).

The East Lake Sammamish area is located on the eastern side of the Seattle metropolitan area and is rapidly becoming a densely urban area. The City of Sammamish was incorporated in 1999 from lands that were formerly unincorporated King County, and has increased rapidly in population growth with both residential and business development.

The City of Sammamish critical area maps identify Lake Sammamish, six streams, and one wetland in the vicinity of SE 8th Street within the project area. The NWI maps identify Lake Sammamish and one palustrine scrub-shrub wetland west of the vicinity of SE 22nd Place within the project area. Additional wetlands are mapped east of East Lake Sammamish Parkway.

The NRCS Soil Survey for King County Area (Snyder et al. 1973) identifies five soil mapping units within the project area: Seattle muck, which NRCS identifies as a hydric soil; Kitsap silt loam (2 to 8 percent slopes), and Kitsap silt loam (15 to 30 percent slopes), which are identified as partially hydric; and Alderwood gravelly sandy loam (15 to 30 percent slopes) and Alderwood and Kitsap soils (very steep), which are not identified as a hydric soil.

3.2 Wetlands

Project biologists delineated 37 wetlands in the project area (Figures 3-2a through 3-2g). Table 3-1 provides a summary of characteristics for all wetlands. A summary of wetland functions and values (Table 3-2), along with detailed descriptions for wetlands identified and delineated by Parametrix, are provided below.

Wetland	Size (acres)	Ecology/ Sammamish Rating ª	Buffer Width ^b (feet)	USFWS Class ^c	HGM Class ^d
15A	~0.10		50	PFO/PEM	Lake-Fringe/Slope
15BC	~0.15	IV	50	PFO/PEM	Depressional/Riverine/Slope
15D	0.05	IV	50	PEM	Depressional
15E	0.05	IV	50	PEM	Depressional
18C	0.02	111	50	PSS	Depressional
19A	0.01	IV	50	PEM	Depressional
19B	~0.36	111	50	PSS/PEM	Lake-Fringe/Slope
20A	0.05	111	50	PEM	Depressional/Slope
21AC	~0.40	111	50	PEM	Lake-Fringe/Slope
21B	~0.08	111	50	PFO/PSS	Depressional
21D	~0.15	IV	50	PEM	Depressional/Slope
22AB	0.46	111	50	PFO/PSS/PEM	Depressional/Slope
22CD	0.06	IV	50	PSS/PEM	Depressional/Slope
22E	<0.01	IV	50	PEM	Depressional
23A	0.03	IV	50	PEM	Depressional/Slope
23B	~0.05	111	50	PSS/PEM	Lake-Fringe/Slope
23C	0.09	111	50	PSS/PEM	Depressional
24A	0.60	111	50	PFO/PSS/PEM	Depressional/Riverine
24B	~1.75	111	50	PFO/PSS	Depressional/Riverine
24C	0.16	111	50	PFO/PEM	Depressional/Riverine
25A	0.25	111	50	PFO	Depressional/Riverine
25B	0.33	111	50	PFO/PSS/PEM	Depressional
25C	0.25	111	50	PFO/PEM	Depressional
25F	0.06	IV	50	PFO	Depressional
26A	0.91	111	50	PFO/PSS/PEM	Depressional/Riverine
26B	0.02	IV	50	PEM	Slope
26C	0.03	IV	50	PSS/PEM	Depressional
26D	~0.13	111	50	PSS/PEM	Riverine/Lake Fringe
28A	0.09	IV	50	PFO	Depressional/Riverine
28B	0.02	IV	50	PSS	Depressional/Slope
28C	0.02	IV	50	PSS/PEM	Depressional
28D	<0.01	IV	50	PEM	Depressional
28E	0.02	IV	50	PEM	Depressional
29B	~0.03	IV	50	PEM	Slope
29C	~0.06	111	50	PFO	Lake-Fringe/Slope
29D	0.08	IV	50	PSS/PEM	Depressional/Slope
30B	0.20	111	50	PFO	Depressional/Slope

Table 3-1. Summary of Wetlands in the Project Vicinity

^a Hruby (2004), as specified in SMC 21A.50.290

^b SMC 21A.50.290

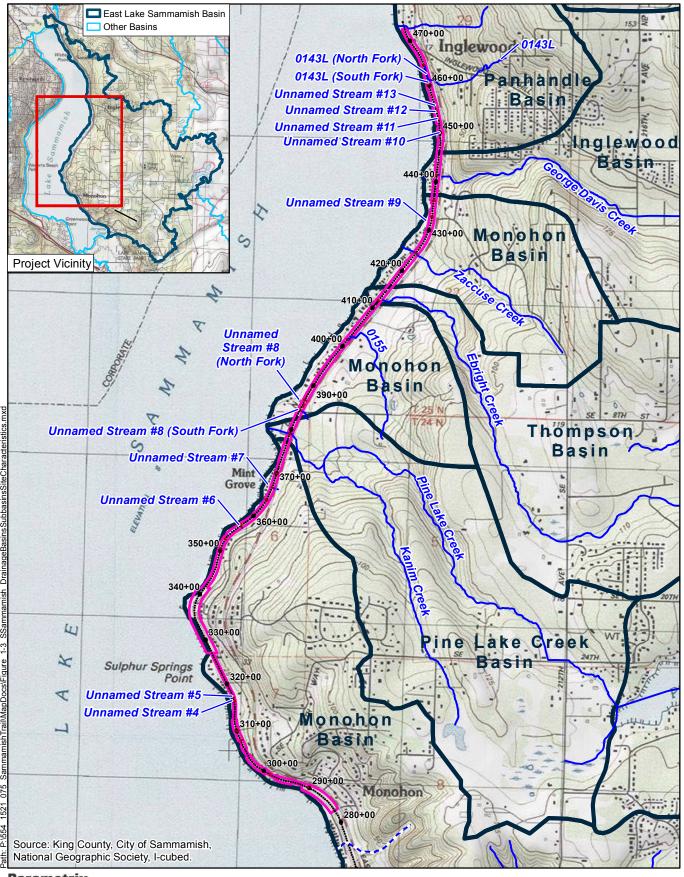
^{C.} Cowardin et al. (1979) classification

PEM = palustrine emergent

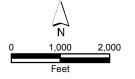
PFO = palustrine forested

PSS = palustrine scrub-shrub

^d Brinson (1993); HGM = hydrogeomorphic



Parametrix



South Sammamish Segment B Project Location
 Stream Crossing Field-verified by Parametrix
 Stream Crossing Not Found within Trail Corridor
 City of Sammamish Drainage Basin



Figure 3-1 Drainage Basins, Subbasins, and Site Characteristics













Figure A Critical Areas Map East Lake Sammamish Master Plan Trail South Sammamish -Segment B







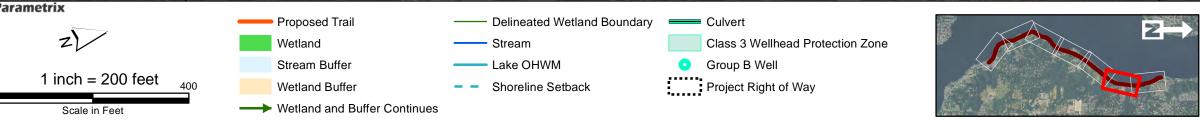


Figure A-6 Critical Areas Map East Lake Sammamish Master Plan Trail South Sammamish -Segment B



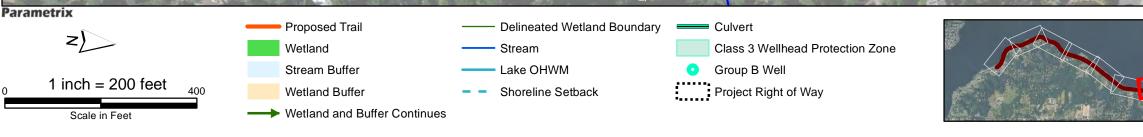




Figure A-7 Critical Areas Map East Lake Sammamish Master Plan Trail South Sammamish -Segment B

		٦	Гаble 3-2. Su	mmary of Wetla	nd Functions an	d Values for V	Vetlands in the Pr	oject Area Ident	tified by Param	etrix
HGM Class	Flood Flow Alteration	Sediment Removal	Nutrient and Toxicant Removal	Erosion Control and Shoreline Stabilization	Production of Organic Matter and its Export	General Habitat Suitability	Habitat for Aquatic Invertebrates	Habitat for Amphibians	Habitat for Wetland- Associated Mammals	Habitat for Wetland- Associated Birds
Lake-Fringe/Slope	L	L	L	L	L	L	L	L	L	L
Depressional/Riverine/Slope	L	L	L	L	L	L	L	L	-	-
Depressional	L	М	Μ	-	L	-	Μ	L	-	-
Depressional	L	м	М	-	L	-	Μ	L	-	-
Depressional	L	L	L	-	-	L	L	L	-	-
Depressional	-	L	L	-	L	-	L	L	-	-
Lake-Fringe/Slope	L	-	L	L	L	L	L	L	L	L
Depressional/Slope	L	L	L	-	L	-	L	L	-	-
Lake-Fringe/Slope	L	-	L	L	L	L	L	L	L	L
Depressional	L	М	L	-	L	L	L	L	-	-
Depressional/Slope	-	L	L	-	L	L	L	L	-	-
Depressional/Slope	М	М	М	L	М	М	L	L	-	-
Depressional/Slope	L	L	L	-	L	L	L	L	-	-
Depressional	L	L	L	-	-	-	-	-	-	-
Depressional/Slope	L	L	L	-	L	L	L	L	-	-
Lake-Fringe/Slope	L	-	L	L	L	L	L	L	L	L
Depressional	L	L	L	-	-	L	L	L	-	-
Depressional/Riverine	М	L	L	М	Н	М	Μ	L	-	-
Depressional/Riverine	М	м	М	М	М	М	Μ	М	L	-

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H = high M = moderate

Wetland

15A

15BC

15D

15E

18C

19A

19B

20A

21AC

21B

21D

22AB

22CD

22E

23A

23B

23C

24A

24B

24C

25A

25B

25C

25F

26A

26B

26C

26D

28A

28B

28C

28D

28E

29B

29C

29D

Depressional/Riverine

Depressional/Riverine

Depressional/Riverine

Riverine/Lake-Fringe

Depressional/Riverine

Depressional/Slope

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Lake-Fringe/Slope

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L = low

- = Does not provide this function

Critical Areas Study East Lake Sammamish Master Plan Trail - South Sammamish Segment B King County

General Fish Habitat	Native Plant Richness	Educational or Scientific Value	Uniqueness and Heritage
L	-	-	-
L	-	-	-
-	L	-	-
-	L	-	-
-	L	-	-
-	-	-	-
L	-	-	-
-	-	-	-
L	-	-	-
-	L	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
L	-	-	-
-	-	-	-
М	-	-	-
М	-	-	-
L	-	-	-
М	-	-	-
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L	-	-	-
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L	L	-	-
L	-	-	-
-	-	-	-
-	-	-	-
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-	-	-	-
-	-	-	-
L	L	-	-
-	L	-	
М	Н	-	-

Wetland 15A

Subbasin: Monohon USFWS Classification: Palustrine Forested/Palustrine Emergent HGM Classification: Lake-Fringe/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 15A-SP1, 15A-SP2 Stations: 317+00 to 318+25 Size: Approximately 0.10 acre

Wetland 15A is associated with Lake Sammamish, located primarily in a maintained residential lawn on the west side of the trail approximately 100 feet south of East Lake Sammamish Shore Lane SE and the intersection of East Lake Sammamish Parkway and SE 26th Street (see Figure 3-2b). Wetland 15A extends outside the project area to the west, down to the lake.

Hydrology

Wetland hydrology is primarily maintained by groundwater seeps along the hill slope, a stream (Unnamed Stream 5), and Lake Sammamish. Unnamed Stream 5 flows from a culvert under the trail (connecting to Wetland 15BC), contributing through flow to the wetland, prior to connecting downstream with Lake Sammamish. The stream appears to be perennial with water flowing during the September 2013 field visit. Saturation in the upper 12 inches of the soil profile was observed during site visits conducted in October 2007 and March 2014. Outside of Lake Sammamish and Unnamed Stream 5, this wetland has a saturated-only water regime.

Vegetation

Wetland 15A has two vegetation communities: forested and emergent. The forested community is dominated by western redcedar (*Thuja plicata*), black cottonwood (*Populus balsamifera*), and red alder (*Alnus rubra*) in the overstory and salmonberry (*Rubus spectabilis*) and English ivy (*Hedera helix*) in the understory. Other species observed include Oregon ash (*Fraxinus latifolia*), Douglas fir (*Pseudotsuga menziesii*), cherry (*Prunus spp.*), Indian plum (*Oemleria cerasiformis*), slough sedge (*Carex obnupta*), western swordfern (*Polystichum munitum*), and hedge false bindweed (*Calystegia sepium*). The emergent community is dominated by maintained lawn, reed canarygrass (*Phalaris arundinacea*), and giant horsetail (*Equisetum telmateia*).

Soils

Soil in Wetland 15A was examined to a depth of 16 inches and consists of two layers. The upper layer is a 14-inch layer of black (10YR 2/1) silt loam with gravel. The lower layer is a black (10YR 2/1) silt loam. High organic content was present throughout the profile. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 15A is situated in a residentially developed area with single-family houses and associated yards to the north, east, and south. Lake Sammamish borders the wetland to the west. Wetland buffer consists of maintained lawn, scattered trees, and shrubs including red alder, western redcedar, and redwood (*Sequoia* sp.). The buffer between Wetland 15A and the trail is primarily composed of

herbaceous vegetation and a row of arborvitae (*Thuja occidentalis*). Wetland 15BC is located on the east side of the trail.

Wetland Classification

Wetland 15A is classified as a palustrine forested/palustrine emergent wetland under the Cowardin et al. (1979) system and a lake-fringe/slope wetland under the HGM system (Null et al. 2000; Hruby 2004). Wetland 15A is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 42 points on the Washington State Wetland Rating System for Western Washington rating form (18 points for water quality functions, 8 point for hydrologic functions, and 16 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A. 50. 290).

Wetland Determination

Biologists flagged the boundary of Wetland 15A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 15BC Subbasin: Monohon USFWS Classification: Palustrine Forested/Palustrine Emergent HGM Classification: Depressional/Riverine/Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 15C-SP1 Stations: 315+50 to 319+25 Size: Approximately 0.15 acre

Wetland 15BC¹ is located primarily in a maintained residential lawn on the east side of the trail approximately 100 feet south of East Lake Sammamish Shore Lane SE and the intersection of East Lake Sammamish Parkway and SE 26th Street (see Figure 3-2b). Wetland 15BC extends outside the project area to the east.

Hydrology

Wetland hydrology is maintained by groundwater seeps from the slope to the east and through flow from two perennial streams (Unnamed Streams 4 and 5). The wetland outlets via the two streams that flow through separate culverts under the trail, eventually entering Lake Sammamish to the west. A culvert passes under a filled area connecting two portions of this wetland and conveying flow from Unnamed Stream 5¹. Unnamed Stream 5 provides a surface water connection from Wetland 15BC to Wetland 15A. Soils were saturated in the upper 12 inches and to the surface in areas during the site visits in 2007 and 2014. This wetland has a saturated only water regime.

¹ Wetland 15BC was identified as two separate wetlands (Wetlands 15B and 15C) during the initial wetland delineations (Parametrix 2005).

Vegetation

Wetland 15BC has two vegetation communities: forested and emergent. There are two forested communities; one is dominated by corkscrew willow (*Salix matsudana*) with one horse chestnut (*Aesculus hippocastanum*) and one Lombardy poplar (*Populus nigra*), and the other is dominated by red alder, Oregon ash, and a large overhanging weeping willow (Salix babylonica). The understory is composed of salmonberry, common ladyfern (*Athyrium filix-femina*), reed canarygrass, creeping buttercup (*Ranunculus repens*), small-fruited bulrush (*Scirpus microcarpus*), common rush (*Juncus effusus*), giant horsetail, fringed willowherb (*Epilobium ciliatum*), grasses, watercress (*Nasturtium officinale*), different leaved water-starwort (*Callitriche heterophylla*), and few western swordfern. The emergent community consists of grass (mowed lawn), reed canarygrass, common rush, small-fruited bulrush, skunk cabbage (*Lysichiton americanus*), giant horsetail, ladyfern, hedge false bindweed, and fringed willowherb.

Soils

Soil examined in Wetland 15BC consists of a single 17-inch layer of a very dark gray (10YR 3/1) silt loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

The area surrounding Wetland 15BC is developed with single-family residences and associated yards. Directly to the east of the wetland is a sloped yard dominated by mowed grass. A few scattered trees lie to the northeast and southeast. Vegetation in the buffer includes ornamental shrubs, Douglas fir, and western redcedar. The vegetation between the wetland and trail consists of a laurel hedge, grasses, and ornamental shrubs.

Wetland Classification

Wetland 15BC is classified as a palustrine forested/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/riverine/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 15BC is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 27 points on the Washington State Wetland Rating System for Western Washington rating form (4 points for water quality functions, 10 points for hydrologic functions, and 13 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 15BC where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Critical Areas Study East Lake Sammamish Master Plan Trail - South Sammamish Segment B King County

Wetland 15D Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 15D-SP1, 15D-SP2 Stations: 320+75 to 325+75 Size: 0.05 acre

Wetland 15D is a maintained swale bounded by the fill slope of the trail and a cut slope immediately east of the trail, north of SE 26th Street (see Figure 3-2b). This swale is vegetated with herbaceous species, but receives periodic clearing and dredging. It functions as a ditch conveying water along the trail to downgradient aquatic systems. This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is supported by groundwater discharge, seasonally high groundwater, and local area runoff. Surface water from Wetland 15E is also conveyed to Wetland 15D from a pipe at the north end and a pipe at the south end. Wetland 15D is on a crest sending some surface water north and some south. Water flowing north exits through a culvert under a private driveway, then goes into a grassy swale where some water appears to infiltrate and some is conveyed farther north via a small corrugated pipe. Water flowing south exits through a culvert under SE 26th Street, then continues south in a ditch to Wetland BC. Surface water from Wetland BC flows under the trail to Lake Sammamish. Saturation to the surface and inundation were observed during the January 2009 and September 2013 field investigations. This wetland has permanently flooded, seasonally flooded, and saturated only water regimes.

Vegetation

Wetland 15D has an emergent community that is periodically maintained. Dominant species include different leaved water-starwort, common duckweed (*Lemna minor*), creeping buttercup, small-fruited bulrush, and English ivy (encroaching from the adjacent upland slope). Other species observed include reed canarygrass, American speedwell (*Veronica americana*), common rush, watercress, ladyfern, rough bluegrass (*Poa trivialis*), red fescue (*Festuca rubra*), birdsfoot trefoil (*Lotus corniculatus*), and little western bittercress (*Cardamine oligosperma*).

Soils

Soils examined in Wetland 15D were a black (N 2.5/1) loamy sand over a very dark greenish gray (10Y 3/1) sand. Gravels and cobbles were present throughout the profile. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

The wetland is in a residential area surrounded by single-family residences and associated yards. A private driveway, SE 26th Street, and the trail border the wetland to the north, south, and west that have a narrow maintained herbaceous layer. Portions of the slope to the east have a rock or concrete retaining wall. Although narrow, there is a vegetated buffer to the east that is dominated by Himalayan blackberry and English ivy. Other species include hedge false bindweed, rose (*Rosa* sp.), laurel, beaked

hazelnut (*Corylus cornuta*), bigleaf maple (*Acer macrophyllum*), and little western bittercress. Connectivity to other wetlands is inhibited by development.

Wetland Classification

Wetland 15D is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and a depressional wetland under the HGM system (Null et al. 2000; Hruby 2004). Wetland 15D is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 29 points on the Washington State Wetland Rating System for Western Washington rating form (8 points for water quality functions, 10 points for hydrologic functions, and 11 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 15D where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 15E Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 15E-SP1, 15E-SP2 Stations: 320+75 to 324+75 Size: 0.05 acre

Wetland 15E is a maintained swale bounded by the fill slope of the trail and a cut slope immediately west of the trail, north of SE 26th Street (see Figure 3-2b). This swale is vegetated with herbaceous species, but receives periodic clearing and dredging. It functions as a ditch conveying water along the trail to downgradient aquatic systems. This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is supported by high groundwater and local area runoff. Wetland 15E is on a crest sending some surface water north and some south. Culverts at both ends of the wetland convey water under the trail to Wetland 15D. Saturation to the surface and inundation were observed during the January 2009 and September 2013 field investigations. This wetland has permanently flooded and saturated only water regimes.

Vegetation

Wetland 15E has an emergent community that is periodically maintained. Dominant species include small-fruited bulrush and common duckweed. Other species observed include American speedwell, common rush, ladyfern, different leaved water-starwort, creeping buttercup, rough bluegrass, common velvetgrass (*Holcus lanatus*), giant horsetail, water horsetail (*Equisetum fluviatile*), watercress, common cattail (*Typha latifolia*), fringed willowherb, reed canarygrass, and birdsfoot trefoil.

Soils

Soil examined in Wetland 15E was a black (10YR 2/1) sandy silt loam. Decomposing organic matter and gravel were present throughout the profile. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

The wetland is in a residential area surrounded by single-family residences and associated yards. A private driveway, SE 26th Street, and the trail border the wetland to the north, south, and east that have a narrow maintained herbaceous layer. A row of arborvitae with mulch is located to the north between the wetland and the private driveway. Although narrow, there is a vegetated buffer to the west that contains small patches of trees dominated by Douglas fir, bigleaf maple, western redcedar, and an ornamental fruit tree. The understory is dominated by salal (*Gaultheria shallon*), western swordfern, and English ivy. Other species include Himalayan blackberry (*Rubus armeniacus*), beaked hazelnut, bracken fern (*Pteridium aquilinum*), creeping buttercup, red fescue, reed canarygrass, and hedge false bindweed. Connectivity to other wetlands is inhibited by development.

Wetland Classification

Wetland 15E is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and a depressional wetland under the HGM system (Null et al. 2000; Hruby 2004). Wetland 15E is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 28 points on the Washington State Wetland Rating System for Western Washington rating form (4 points for water quality functions, 14 points for hydrologic functions, and 10 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 15E where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 18C Subbasin: Monohon USFWS Classification: Palustrine Scrub-Shrub HGM Classification: Depressional Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 18C-SP1, 18C-SP2 Stations: 330+75 to 331+75 Size: 0.02 acre

Wetland 18C is located in a ravine on the east side of the trail in a residentially developed area bounded to the north and south by residential yards (see Figure 3-2b). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by local area runoff from slopes to the east and north and seasonally high groundwater. The wetland is a closed depression with no outlet. Soil saturation in the upper 12

inches was observed during the October 2007 site visit and standing water (measured 8 inches) was present during the March 2014 site visit. This wetland has a seasonally flooded water regime.

Vegetation

Wetland 18C is a scrub-shrub wetland community dominated by red-osier dogwood (*Cornus sericea*). Sub-dominant vegetation includes Oregon ash, Himalayan blackberry, common scouring rush (*Equisetum hyemale*), and slough sedge.

Soils

Soil in Wetland 18C was examined to a depth of 18 inches and consists of three layers. The surface layer is a 6-inch layer of very dark gray (10YR 3/1) silt loam. The subsurface layers are a 6-inch layer of very dark gray (10YR 3/1) gravelly silt loam with light red (2.5Y 6/6) redoximorphic features over a 6-inch layer of dark gray (10YR 4/1) gravelly sandy loam. Soil in the area is mapped as mixed alluvial land.

Buffer

Wetland 18C is surrounded by single-family residential development. A sloped yard is to the east of the wetland and is dominated by English ivy. The slope to the west of the wetland is partially landscaped (near trail), but most is dominated in the understory by Himalayan blackberry with Pacific madrone (*Arbutus menziesii*), Douglas fir (on lake side of trail), bigleaf maple, western swordfern, and beaked hazelnut.

Wetland Classification

Wetland 18C is classified as a palustrine scrub-shrub wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 18C is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 44 points on the Washington State Wetland Rating System for Western Washington rating form (24 points for water quality functions, 14 points for hydrologic functions, and 6 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 18C where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Critical Areas Study East Lake Sammamish Master Plan Trail - South Sammamish Segment B King County

Wetland 19A Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 19A-SP1 Stations: 347+50 to 348+25 Size: 0.01 acre

Wetland 19A is primarily a vegetated ditch located on the east side of the trail in a residential area between the trail and East Lake Sammamish Place SE (see Figure 3-2c). This wetland is located entirely within the project area.

Hydrology

Hydrology is supported by local area runoff and groundwater seeps from the slope to the east. Inundation of 5 inches was observed in the ditch during site visits conducted in November 2007, and saturated soils within the upper 12 inches were observed in September 2013. This wetland has seasonally flooded and saturated only water regimes. No outlet was observed.

Vegetation

Wetland 19A is an emergent wetland community. Dominant vegetation is reed canarygrass. Other vegetation present includes common velvetgrass, common rush, giant horsetail, Himalayan blackberry, hedge false bindweed, purple loosestrife (*Lythrum salicaria*), and Oregon ash.

Soils

Soil in Wetland 19A was examined to a depth of 18 inches and consists of two layers—a very dark gray (7.5YR 3/1) silt loam over a dark gray (2.5Y 4/1) silt loam with light olive brown (2.5Y 5/6) redoximorphic features. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 19A is situated in a residentially developed area with minimal functional buffer. A steep-sloped yard with mowed grass is to the east of the wetland. The trail lies to the west of the wetland with a narrow strip of maintained herbaceous vegetation between. The rest of the vegetated buffer includes English ivy, salal, western swordfern, Himalayan blackberry, and hedge false bindweed.

Wetland Classification

Wetland 19A is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 19A is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 27 points on the Washington State Wetland Rating System for Western Washington rating form (12 points for water quality functions, 8 points for hydrologic functions, and 7 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 19A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 19B Subbasin: Monohon USFWS Classification: Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Lake-Fringe/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 19B-SP1, 19B-SP2 Stations: 347+50 to 349+75 Size: Approximately 0.36 acre

Wetland 19B is located on the west side of the trail in a residential area between the trail and Lake Sammamish (see Figure 3-2c). Wetland 19B extends outside the project area to the west, and is associated with Lake Sammamish. This wetland is mostly lawn, and has been modified since the 2007 field investigation. The vicinity of the original W19B-SP1 location has been filled, landscaped, and terraced; therefore, a new sample plot (W19B-SP1 (rev)) was documented in March 2014.

Hydrology

Wetland hydrology is supported by seasonally high groundwater. The wetland drains toward Lake Sammamish. Soil saturation in the upper 12 inches was observed during site visits conducted in October 2007. In March 2014, soil saturation to the surface with standing water in micro-depressions was observed. This wetland has a saturated only water regime.

Vegetation

Wetland 19B is primarily an emergent wetland community. The wetland is mostly residential lawn dominated by mowed unidentified grass. A small scrub-shrub community occurs along the eastern boundary, dominated by Himalayan blackberry and hedge false bindweed, with some red-osier dogwood and rose.

Soils

Soil in Wetland 19B was examined to a depth of 19 inches and consists of two layers. The surface layer is a black (10YR 2/1) gravelly sandy loam. The subsurface layer is a dark gray (10YR 4/1) gravelly clay loam with yellowish brown (10YR 5/8) redoximorphic features. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 19B is located in a residentially developed area and wetland buffer is mostly maintained lawn with some scattered trees and shrubs. Lake Sammamish is adjacent to the wetland to the west. The trail is located to the east of the wetland. Vegetation between the trail and the wetland is mostly landscaped with a row of arborvitae and patches of Himalayan blackberry, English ivy, and salal. Other species include black cottonwood, western swordfern, snowberry, and giant horsetail.

Wetland Classification

Wetland 19B is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and lake-fringe/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 19B is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 35 points on the Washington State Wetland Rating System for Western Washington rating form (20 point for water quality functions, 4 point for hydrologic functions, and 11 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Wetland 19B was delineated based on the presence of hydric soil and wetland hydrology. Vegetation was not used for delineation because existing vegetation is mowed lawn and may not reflect hydrologic conditions present on the site.

Wetland 20A Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Depressional/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 20A-SP1, 20A-SP2 Stations: 352+75 to 355+25 Size: 0.05 acre

Wetland 20A is a vegetated ditch located on the east side of the trail in a residential area between the trail and East Lake Sammamish Place SE (see Figure 3-2c). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by groundwater seeps along the slope to the east. Most water in the wetland drains through a pipe at the north end that discharges into Wetland 21B and Unnamed Stream 6. Water in the southern portion of Wetland 20A flows through a small pipe and a ditch to the south, then turns west into another pipe under the trail to Lake Sammamish. Inundation was observed in the ditch and soils were saturated in other portions of the wetland during site visits conducted in November 2007. Soil was saturated in the upper 12 inches during the September 2013 field investigation. This wetland has permanently flooded, seasonally flooded, and saturated only water regimes.

Vegetation

Wetland 20A is an emergent wetland vegetation community. Dominant vegetation in the wetland is reed canarygrass. English ivy covers much of the south end. Other species include Himalayan blackberry, ladyfern, skunk cabbage, common cattail, American speedwell, English ivy, fringed willowherb, giant horsetail, field horsetail (*Equisetum arvense*), climbing nightshade (*Solanum dulcamara*), purple loosestrife, and birdsfoot trefoil.

Soils

Soil in Wetland 20A was examined to a depth of 18 inches and consists of two layers. The surface layer is a 6-inch layer of very dark gray (10YR 3/1) silt loam. The subsurface layer is a 12-inch layer of very dark gray (10YR 3/1) gravelly sandy loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 20A is located in a residentially developed area; a functional wetland buffer is limited to a slope on the east side of the wetland that extends to the north and south. Vegetation on the slope is dominated by English ivy and Himalayan blackberry. Other species observed include young Oregon ash, beaked hazelnut, salmonberry, Portugal laurel (*Prunus lusitanica*), and black locust (*Robinia pseudoacacia*).

Wetland Classification

Wetland 20A is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 20A is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 45 points on the Washington State Wetland Rating System for Western Washington rating form (18 points for water quality functions, 16 points for hydrologic functions, and 11 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 20A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 21AC

Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Lake-Fringe/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 21A-SP1, 21A-SP2 Stations: 355+50 to 359+25 Size: Approximately 0.40 acre

Wetland 21AC² is located on the west side of the trail between the trail and Lake Sammamish in a residentially developed area west of the intersection of East Lake Sammamish Place SE, East Lake Sammamish Parkway SE, and SE 16th Street (see Figure 3-2c). Wetland 21AC extends outside the project area to the west, and is associated with Lake Sammamish.

² Wetland 21AC was identified as two separate wetlands (Wetlands 21A and 21C) during the initial wetland delineations (Parametrix 2005).

Hydrology

Wetland hydrology is maintained primarily by groundwater seeps along the slope. Unnamed Stream 6 flows through the wetland in a rock-lined channel in an area that is landscaped. The wetland is sloped and drains toward Lake Sammamish. Occasional inundation occurs and soil saturation at the surface was observed during site visits in October 2007 and March 2014. This wetland has permanently flooded, occasionally flooded, and saturated only water regimes.

Vegetation

Wetland 21AC is an emergent vegetation community. A majority of the wetland is maintained lawn dominated by unidentified mowed grass, small-fruited bulrush, and creeping buttercup. Other species identified include red-osier dogwood, salmonberry, small-fruited bulrush, common forget-me-not (*Myosotis scorpioides*), and common velvetgrass. An aquatic bed community is present in the lake, outside of the project area.

Soils

Soil in Wetland 21AC was examined to a depth of 16 inches and consists of three layers. The upper layer is a 4-inch very dark gray (10YR 3/1) sandy loam. The lower layers consist of a 5-inch gray (10YR 5/1) loamy sand with strong brown (7.5YR 4/6) redoximorphic features over a 7-inch dark greenish gray (10Y 4/1) gravelly sand. Soil in the area was mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 21AC is situated in a residentially developed area with single-family residences and associated yards to the northeast, southeast, and southwest. Lake Sammamish borders the wetland to the northwest. Buffer vegetation consists primarily of ornamental shrubs with beaked hazelnut, swordfern, salmonberry, and maintained lawn dominated by unidentified mowed grass.

Wetland Classification

Wetland 21AC is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and lake-fringe/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 21AC is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 34 points on the Washington State Wetland Rating System for Western Washington rating form (18 points for water quality functions, 4 point for hydrologic functions, and 12 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 21AC where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 21B

Subbasin: Monohon USFWS Classification: Palustrine Forested/Palustrine Scrub-Shrub HGM Classification: Depressional Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 21B-SP1, 21B-SP2 Stations: 355+50 to 356+75 Size: Approximately 0.08 acre

Wetland 21B is a depression, located on the east side of the trail in a residentially developed area west of the intersection of East Lake Sammamish Place SE, East Lake Sammamish Parkway SE, and SE 16th Street (see Figure 3-2c). This wetland extends to the east, outside of the project area.

Hydrology

Wetland hydrology is maintained by local area runoff and Unnamed Stream 6. A culvert at the south end of the wetland passes under a residential driveway and discharges surface water from Wetland 20A. Water flows north through the wetland joining Unnamed Stream 6 and exits through a culvert passing west under the trail into Wetland 21AC. Soil saturation to the surface and inundation was observed in a ditched portion of the wetland during site visits conducted in November 2007 and September 2013. This wetland has permanently flooded, occasionally flooded, and saturated only water regimes.

Vegetation

Wetland 21B has two vegetation communities: forested and scrub-shrub. The forested community is dominated by red alder and Oregon ash. The scrub-shrub community is dominated by salmonberry, beaked hazelnut, and red-osier dogwood. Other non-dominant species include black twinberry (*Lonicera involucrata*), stink currant (*Ribes bracteosum*), giant horsetail, ladyfern, reed canarygrass, skunk cabbage, climbing nightshade, stinging nettle (*Urtica dioica*), and Himalayan blackberry.

Soils

Soil in Wetland 21B was examined to a depth of 18 inches and consists of a single layer of black (10YR 2/1) silt loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

The wetland is situated in a residentially developed area. The trail separates the wetland from Wetland 21AC to the northwest. Single-family residences exist to the northeast and southwest. An upland forest area exists to the southeast. Vegetation in the forested buffer includes bigleaf maple, western swordfern, beaked hazelnut, cascara buckthorn (*Rhamnus purshiana*), red elderberry (*Sambucus racemosa*), Oregon ash, salmonberry, stinging nettle, and creeping buttercup. The buffer between Wetlands 21B and 21D (to the northeast) comprises Himalayan blackberry, maintained lawn, and landscaped plantings. The vegetated buffer immediately adjacent to the trail consists of mowed grass, reed canarygrass, and Himalayan blackberry.

Wetland Classification

Wetland 21B is classified as a palustrine forested/palustrine scrub-shrub wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 21B is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 39 points on

the Washington State Wetland Rating System for Western Washington rating form (14 points for water quality functions, 10 points for hydrologic functions, and 15 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 21B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 21D Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Depressional/Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 21D-SP1 (rev) Stations: 357+50 to 359+25 Size: Approximately 0.15 acre

Wetland 21D is a vegetated swale located on the east side of the trail in residential yards west of the intersection of East Lake Sammamish Place SE, East Lake Sammamish Parkway SE, and SE 16th Street (see Figure 3-2c). This wetland extends upslope, outside the project area to the east.

Hydrology

Wetland hydrology is supported by groundwater discharge, seasonally high groundwater, and local area runoff. Water discharges into the wetland from two drainage sources (pipe and half-pipe) at the north end of the wetland, and seeps from the slope to the east. Water flows south through a swale in the wetland and exits through a culvert at the south end. This pipe appears to join Unnamed Stream 6, which then flows west toward Lake Sammamish through Wetland 21AC. Saturation to the surface and flowing water in the swale was observed during site visits conducted in November 2007 and September 2013. This wetland has permanently flooded and saturated only water regimes.

Vegetation

Wetland 21D is an emergent vegetation community dominated by maintained lawn with unidentified mowed grass. Other species present include small-fruited bulrush, reed canarygrass, common velvetgrass, common rush, fringed willowherb, Himalayan blackberry, Canada thistle (*Cirsium arvense*), spiny sowthistle (*Sonchus asper*), American speedwell, watercress, and ladyfern.

Soils

Soil in Wetland 21D was examined to a depth of 14 inches and consists of two layers. The surface layer is a very dark gray (10YR 3/1) silt loam and the subsurface layer is a very dark gray (10YR 3/1) gravelly sandy loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

The wetland is situated in a residential area and surrounded by single-family residences and associated yards. Vegetation consists primarily of maintained lawn and ornamental shrubs. Connectivity to other wetlands is inhibited by development.

Wetland Classification

Wetland 21D is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 21D is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 18 points on the Washington State Wetland Rating System for Western Washington rating form (2 points for water quality functions, 6 points for hydrologic functions, and 10 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 21D where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 22AB

Subbasin: Monohon USFWS Classification: Palustrine Forested/Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Depressional/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 22AB-SP1, 22AB-SP2 Stations: 361+00 to 367+00 Size: 0.46 acre

Wetland 22AB³ is located on the east side of the trail between the trail and East Lake Sammamish Parkway, northwest of the intersection of East Lake Sammamish Place SE, East Lake Sammamish Parkway SE, and SE 16th Street (see Figures 3-2c and 3-2d). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater, local area runoff, and through flow from an adjacent unnamed stream (Unnamed Stream 7). A culvert passes under East Lake Sammamish Parkway conveying Unnamed Stream 7 adjacent to the north end of Wetland 22AB. Water exits the wetland through culverts under the trail at the south end, center, and north end of the wetland and is piped to Lake Sammamish. Soil saturation at the surface and surface water flowing through the wetland and ditch was observed during site visits conducted in November 2007, May 2008, and September 2013.

³ Wetland 22AB was identified as two separate wetlands (Wetlands 22A and 22B) during the initial wetland delineations (Parametrix 2005).

This wetland has permanently flooded, seasonally flooded, occasionally flooded, and saturated only water regimes.

Vegetation

Wetland 22AB has three vegetation communities: forested, scrub-shrub, and emergent. Vegetation in the forested community includes red alder, black cottonwood, Pacific willow (*Salix lucida*), red-osier dogwood, salmonberry, Himalayan blackberry, bigleaf maple, and grape (*Vitus* sp.). Vegetation in the scrub-shrub community includes red-osier dogwood, Sitka willow (*Salix sitchensis*), salmonberry, Himalayan blackberry, Pacific willow, English ivy, thimbleberry (*Rubus parviflorus*), and ornamental shrubs. The emergent community in the wetland includes reed canarygrass, hedge false bindweed, ladyfern, giant horsetail, American skunk cabbage, stinging nettle, small-fruited bulrush, and Robert's geranium (*Geranium robertianum*).

Soils

Two wetland soil pits were examined in Wetland 22AB. The first soil pit (W22AB-SP1) was dug in the forested vegetation community and examined to a depth of 18 inches. The soil pit consists of a single 18-inch layer of black (10YR 2/1) sandy muck. The second soil pit (W22AB-SP2) was dug in scrub-shrub vegetation community and consists of three layers. The upper layer is a 6-inch layer of black (10YR 2/1) mucky loam. The middle layer is a 2-inch layer of black (10YR 2/1) mucky sandy loam. The lower layer is a 10-inch layer of black (2.5Y 2. 5/1) mucky loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 22AB is situated in a residentially developed area. Single-family residences exist to the north, south, and west of the wetland. A small vegetated upland area to the north provides connectivity to Wetland 22CD. A narrow vegetated buffer exists to the east between the wetland and the East Lake Sammamish Parkway in the northern portion of the wetland. Vegetation within this area includes Sitka spruce (*Picea sitchensis*), black cottonwood, and red alder. No vegetation is located between the wetland and the trail.

Wetland Classification

Wetland 22AB is classified as a palustrine forested/palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 22AB is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 46 points on the Washington State Wetland Rating System for Western Washington rating form (20 points for water quality functions, 6 points for hydrologic functions, and 20 points for habitat functions) (see Appendix B). The required buffer width is 75 feet for Category III wetlands scoring between 20 and 28 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 22AB where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 22CD Subbasin: Monohon USFWS Classification: Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Depressional/Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 22CD-SP1(rev), 22CD-SP2(rev) Stations: 368+00 to 370+50 Size: 0.06 acre

Wetland 22CD is located on the east side of the trail between the trail and East Lake Sammamish Parkway (see Figure 3-2d). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is supported by local area runoff and seasonally high groundwater. The wetland is drained by a ditch running along the toe of the trail prism. Water flows from both the north and the south and drains through a culvert that passes under the trail and flows west to Lake Sammamish. An upland area separates the northern and southern portion of the wetland, but hydrologic connectivity is maintained by a culvert. In October 2013, gravel was observed in the ditch adjacent to the lawn area to the north. Water was not visible in this portion of the ditch due to the gravel depth. Soil was saturated during the November 2007 and October 2013 site visits. Standing water in the southern portion of the ditch was also observed in 2013. This wetland has occasionally flooded and saturated only water regimes.

Vegetation

Wetland 22CD has two vegetation communities: scrub-shrub and emergent. The scrub-shrub community is in the center of the wetland, dominated by Himalayan blackberry. Emergent communities are located at the north and south ends. The northern emergent community is the largest portion of the wetland, dominated by mowed grass and creeping buttercup. The southern emergent community is dominated by reed canarygrass, small-fruited bulrush, and fowl bluegrass (*Poa palustris*). Other species present include red-osier dogwood, giant horsetail, redtop (*Agrostis gigantea*), common velvetgrass, hedge false bindweed, common rush, and birdsfoot trefoil. Common duckweed was observed in standing water in the ditch.

Soils

Soil examined in Wetland 22CD consisted of a 16-inch layer of black (10YR 2/1) gravelly sandy loam over a very dark gray (N 3/-) sandy loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 22CD is situated in a residentially developed area. The vegetated buffer to the east consists of a lawn with a few trees including Lombardy poplar, Japanese knotweed (*Fallopia japonica*), Himalayan blackberry, western redcedar, red alder, red-osier dogwood, and ornamental plum (*Prunus* sp.). The buffer between the wetland and the trail is composed of a narrow band of maintained herbaceous vegetation. A vegetated area to the south of the wetland provides a corridor to Wetland 22AB. East Lake Sammamish Shore Lane SE is located to the north of Wetland 22CD.

Wetland Classification

Wetland 22CD is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 22CD is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 22 points on the Washington State Wetland Rating System for Western Washington rating form (6 points for water quality functions, 7 points for hydrologic functions, and 9 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 22CD where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 22E Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plot: 22E-SP1 Stations: 365+25 to 365+75 Size: <0.01 acre

Wetland 22E is a narrow swale located on the west side of the trail between the trail and East Lake Sammamish Shore Lane SE (see Figures 3-2c and 3-2d). This wetland is located entirely within the project area, within the maintained portion of the corridor.

Hydrology

Wetland hydrology is supported by local area runoff and seasonally high groundwater with no surface water inlets or outlets. Soil was saturated to the surface during the October 2013 site visit. This wetland has a saturated only water regime.

Vegetation

Vegetation in Wetland 22E is an emergent community consisting of giant horsetail, reed canarygrass, small-fruited bulrush, creeping buttercup, skunk cabbage, Cooley's hedgenettle (*Stachys chamissonis*), yellow flag (*Iris pseudacorus*), and birdsfoot trefoil.

Soils

Soil examined in Wetland 22E consisted of a 13-inch layer of very dark brown (10YR 2/2) silt loam over a dark greenish gray (10Y 4/1) gravelly sandy loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 22E is situated in a residentially developed area. The vegetated buffer is limited between the trail and East Lake Sammamish Shore Lane SE, consisting of maintained grasses, English ivy, and a row of arborvitae.

Wetland Classification

Wetland 22E is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 22E is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 26 points on the Washington State Wetland Rating System for Western Washington rating form (8 points for water quality functions, 9 points for hydrologic functions, and 9 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 22E where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 23A Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Depressional/Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 23A-SP1, 23A-SP2 Stations: 373+50 to 374+25 Size: 0.03 acre

Wetland 23A is located on the east side of the trail between the trail and East Lake Sammamish Parkway (see Figure 3-2d). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by groundwater seeps from the slope to the east and local area runoff collected in the trailside ditch from the north and south. Standing water was observed in the associated ditch during the September 2013 site visit. This wetland has saturated only and permanently flooded water regimes.

Vegetation

Wetland 23A contains an emergent vegetation community. Dominant vegetation includes reed canarygrass and giant horsetail. Other species observed include small-fruited bulrush, red fescue, common scouring rush (*Equisetum hyemale*), common ladyfern, bentgrass (*Agrostis* sp.), common cattail, common velvetgrass, common rush, fringed willowherb, black twinberry, and cluster rose (*Rosa pisocarpa*). American speedwell and common duckweed were present in the ditch.

Soils

Soil examined in Wetland 23A consisted of a 10-inch layer of very black (10YR 2/1) gravelly sandy loam over a very dark gray (2.5Y 3/1) gravelly sandy loam with dark yellowish brown (10YR 4/6) redoximorphic features. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland buffer consists of a narrow strip between the trail and East Lake Sammamish Parkway. Vegetation in the buffer includes bigleaf maple, English ivy, bracken fern, giant horsetail, common scouring rush, salal, cluster rose, Himalayan blackberry, western swordfern, and red alder. The trail and a very narrow band of maintained reed canarygrass is located to the west of the wetland. A forested area to the north of the wetland provides a vegetated corridor to Wetland 23C.

Wetland Classification

Wetland 23A is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 23A is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 27 points on the Washington State Wetland Rating System for Western Washington rating form (14 points for water quality functions, 7 points for hydrologic functions, and 7 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 23A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 23B Subbasin: Monohon USFWS Classification: Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Lake-Fringe/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 23B-SP1, 23B-SP2 Stations: 374+00 to 374+75 Size: Approximately 0.05 acre

Wetland 23B is located on the west side of the trail between the trail and Lake Sammamish (see Figure 3-2d). Wetland 23B extends outside the project area to the west, and is associated with Lake Sammamish.

Hydrology

Wetland hydrology is supported by Lake Sammamish, seasonally high groundwater, and groundwater seeps. Soil saturation in the upper 12 inches was observed during site visits conducted in October 2007. The wetland is sloped and drains to Lake Sammamish. This wetland has a saturated only water regime.

Vegetation

Wetland 23B has scrub-shrub and emergent wetland communities. The scrub-shrub community is dominated by red-osier dogwood, Himalayan blackberry, common scouring rush, and yellow flag. Dominant vegetation in the emergent area includes common ladyfern, small-fruited bulrush, field horsetail, and birdsfoot trefoil.

Soils

Soil in Wetland 23B was examined to a depth of 16 inches and consists of two layers. The upper layer is a 10-inch layer of black (10YR 2/1) mucky loam. The lower layer is a dark reddish gray (2.5YR 4/1) gravelly sand. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 23B is situated in a residentially developed area. Single-family residences exist to the north and the south. Lake Sammamish borders the wetland to the west. The wetland is separated from Wetland 23A to the east by the trail. Vegetation in the surrounding buffer area is dominated by Himalayan blackberry, trailing blackberry (*Rubus ursinus*), and hedge false bindweed, with black cottonwood, western redcedar, giant horsetail, common scouring rush, bracken fern, and western swordfern.

Wetland Classification

Wetland 23B is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and lake-fringe/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 23B is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 34 points on the Washington State Wetland Rating System for Western Washington rating form (20 points for water quality functions, 4 points for hydrologic functions, and 10 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 23B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 23C Subbasin: Pine Lake USFWS Classification: Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 23C-SP1, 23C-SP2 Stations: 377+25 to 378+50 Size: 0.09 acre

Wetland 23C is located on the east side of the trail between the trail and East Lake Sammamish Parkway, south of Pine Lake Creek, and approximately 600 feet southeast of SE 8th Street (see Figure 3-2d). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is supported by seasonally high groundwater and local area runoff. Saturation was observed during site visits conducted in November 2007. Although no inundation was observed during the site visit, soils were saturated in the upper 12 inches. The wetland drains to the trailside ditch to the south that is connected downgradient to Wetland 23A. This wetland has permanently flooded (in ditch), occasionally flooded, and saturated only water regimes.

Vegetation

Wetland 23C has two vegetation communities: scrub-shrub and emergent. The scrub-shrub community is dominated by Himalayan blackberry and salmonberry with other species including Pacific willow, Sitka willow, black twinberry, common ladyfern, giant horsetail, and red elderberry. Some reed canarygrass is

growing in this community. The emergent community is dominated by reed canarygrass, ladyfern, and creeping buttercup. Other species include giant horsetail and common duckweed (in ditch).

Soils

Soil in Wetland 23C was examined to a depth of 18 inches and consists of two layers. The upper layer is an 11-inch layer of black (10YR 2/1) loam. The lower layer is a dark gray (5Y 4/1) loamy clay with strong brown (7.5YR 4/6) redoximorphic features. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Single-family residences and the trail exist to the west of the wetland. Vegetated areas to the north and east of the wetland are dominated by Himalayan blackberry and disturbed vegetation with few trees; connections to other habitats are disrupted by roads and driveways. A vegetated corridor to the south of the wetland provides connectivity to Wetland 23A. Vegetation in the buffer to the south includes ornamental plum, Himalayan blackberry, bracken fern, and reed canarygrass.

Wetland Classification

Wetland 23C is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 23C is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 38 points on the Washington State Wetland Rating System for Western Washington rating form (10 points for water quality functions, 14 points for hydrologic functions, and 14 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A. 50. 290).

Wetland Determination

Biologists flagged the boundary of Wetland 23C where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 24A

Subbasin: Pine Lake USFWS Classification: Palustrine Forested/Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Depressional/Riverine Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 24A-SP1 Stations: 379+25 to 385+25 Size: 0.60 acre

Wetland 24A is located on the east side of the trail between the trail and East Lake Sammamish Parkway west of the intersection of East Lake Sammamish Parkway and SE 8th Street (see Figure 3-2d). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is supported by seasonally high groundwater, local area runoff, and overbank flow of Unnamed Stream 8 and Pine Lake Creek. Pine Lake Creek drains into the southern end of Wetland 24A and Unnamed Stream 8 drains into the northern end. Pine Lake Creek continues west through

Wetland 24A through a culvert under the trail to Wetland 24B. Historically, Unnamed Stream 8 flowed west through Wetland 24A to Wetland 24B via a pipe under the trail. However, the channel of Unnamed Stream 8 has been altered and flows travel both west (as South Fork Unnamed Stream 8, to Wetland 24B) and north (as North Fork Unnamed Stream 8) to Wetland 24C via a pipe under a driveway. A ditch runs along the west side of the wetland, parallel to the trail. Surface water occurs in this ditch between Pine Lake Creek and Unnamed Stream 8. This wetland has occasionally flooded and saturated only water regimes. The ditch has permanent standing water. Soils were saturated during the wetland delineation and standing water was observed in the ditch during the September 2013 site visit.

Vegetation

Wetland 24A has three vegetation communities: forested, scrub-shrub, and emergent. The forested community is dominated by red alder with an understory of salmonberry and giant horsetail. Other species include reed canarygrass, black twinberry, Pacific willow, cluster rose, and common ladyfern. The scrub-shrub community consists of red-osier dogwood, Himalayan blackberry, salmonberry, black twinberry, reed canarygrass, cluster rose, and giant horsetail. The emergent vegetation, primarily located in the ditch adjacent to the trail, includes reed canarygrass, common ladyfern, giant horsetail, yellow flag, small-fruited bulrush, common rush, Cooley's hedgenettle, and large-leaf avens (*Geum macrophyllum*).

Soils

Soil in Wetland 24A was examined to a depth of 18 inches and consists of two layers. The upper layer consists of a 12-inch layer of black (10YR 2/1) silt loam. The lower layer is a very dark gray (10YR 3/1) sandy loam. Soil in the area is mapped as Seattle muck.

Buffer

A narrow band of maintained herbaceous vegetation is located between the wetland and East Lake Sammamish Parkway. Wetland 24B is located to the west of the wetland, but the connection is disrupted by the trail. Driveways separate Wetland 24A from Wetland 23C to the south and Wetland 24C to the north. A very narrow strip of maintained herbaceous vegetation is located between the wetland and the trail.

Wetland Classification

Wetland 24A is classified as a palustrine forested/palustrine scrub-shrub wetland under the Cowardin et al. (1979) system and depressional/riverine under the HGM system (Null et al. 2000; Hruby 2004). Wetland 24A is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 42 points on the Washington State Wetland Rating System for Western Washington rating form (12 points for water quality functions, 12 points for hydrologic functions, and 18 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 24A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Critical Areas Study East Lake Sammamish Master Plan Trail - South Sammamish Segment B King County

Wetland 24B

Subbasin: Pine Lake USFWS Classification: Palustrine Forested/Palustrine Scrub-Shrub HGM Classification: Depressional/Riverine Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 24B-SP1, 24B-SP2 Stations: 379+25 to 384+75 Size: Approximately 1.75 acres

Wetland 24B is located on the west side of the trail in a residential area west of the intersection of East Lake Sammamish Parkway and SE 8th Street (see Figure 3-2d). Wetland 24B extends outside the project area to the west.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater, overbank flow of Pine Lake Creek, South Fork Unnamed Stream 8, and surface water from Wetland 24A. Pine Lake Creek drains from Wetland 24A to the southern end of Wetland 24B via a culvert under the trail. South Fork Unnamed Stream 8 flows west from Wetland 24A to the northern end of Wetland 24B via a culvert under the trail. Inundation was observed in the wetland during site visits conducted in November 2007. This wetland has permanently flooded, occasionally flooded, and saturated only water regimes. Surface water was observed on adjacent property at the southwest corner (near Pine Lake Creek) and at the north end associated with the South Fork Unnamed Stream 8 during the September 2016 site visit.

Vegetation

Wetland 24B is a forested and shrub wetland. Forested vegetation in the wetland includes weeping willow, Pacific willow, red alder, and black cottonwood, with a shrub understory consisting of salmonberry, red-osier dogwood, and Himalayan blackberry. Some areas lack an overstory and are dominated by salmonberry, red-osier dogwood, and Himalayan blackberry. Non-dominant understory species include black twinberry, Sitka willow, Scouler's willow (*Salix scouleriana*), western swordfern, reed canarygrass, giant horsetail, common ladyfern, and hedge false bindweed.

Soils

Soil in Wetland 24B was examined and consists of a single 16-inch layer of black (10YR 2/1) silt loam. Soil in the area is mapped as Kitsap silt loam.

Buffer

Wetland 24B is situated in a residential area with single-family residences and maintained yards to the north, west, and south. Wetland 24A exists to the east, but connectivity is disrupted by the trail. Buffer is limited to a narrow band of vegetation around the wetland. Buffer vegetation includes Pacific ninebark (*Physocarpus capitatus*), Himalayan blackberry, reed canarygrass, thimbleberry, red alder, black cottonwood, and giant horsetail. The buffer between the trail and the wetland is dominated by maintained herbaceous vegetation, reed canarygrass, and hedge false bindweed.

Wetland Classification

Wetland 24B is classified as a palustrine forested/palustrine scrub-shrub wetland under the Cowardin et al. (1979) system and depressional/riverine under the HGM system (Null et al. 2000; Hruby 2004).

Wetland 24B is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 43 points on the Washington State Wetland Rating System for Western Washington rating form (12 points for water quality functions, 12 points for hydrologic functions, and 19 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 24B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking. Wetland 24B extends west outside of the study area.

Wetland 24C

Subbasin: Pine Lake USFWS Classification: Palustrine Forested /Palustrine Emergent HGM Classification: Depressional/Riverine Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 24C-SP1, 24C-SP2 Stations: 385+50 to 390+25 Size: 0.16 acre

Wetland 24C is located on the east side of the trail between the trail and East Lake Sammamish Parkway northwest of the intersection of East Lake Sammamish Parkway and SE 8th Street (see Figure 3-2d). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by local area runoff and by overbank flow of North Fork Unnamed Stream 8. This stream enters the wetland from a culvert that discharges at the southeast corner from Wetland 24A. The stream flows northwest and exits through a culvert that passes under the trail and continues west, likely piped to Lake Sammamish. Soils were saturated during the wetland delineation. This wetland has a seasonally flooded water and saturated only regime.

Vegetation

Wetland 24C has two vegetation communities: forested and emergent. The forested community is dominated by red alder, Himalayan blackberry, black twinberry, Pacific ninebark, Sitka willow, and Pacific willow. Herbaceous vegetation in the understory includes small-fruited bulrush, slough sedge, hedge false bindweed, common ladyfern, giant horsetail, fringed willowherb, and skunk cabbage. An emergent community makes up the narrow portion along the ditch to the north, dominated by reed canarygrass with some small-fruited bulrush and American speedwell.

Soils

Soil in Wetland 24C was examined to a depth of 18 inches and consists of four layers. The upper and first layer is a 6-inch layer of black (10YR 2/1) loam. The second layer is a 4-inch layer of a very dark gray (10YR 3/1) gravelly sandy loam. The third layer is a 6-inch layer of dark grayish brown (10YR 4/2) gravelly sandy loam. The lowest layer is a gray (10YR 5/1) silt with yellowish brown (10YR 5/6) redoximorphic features. Soil in the area is mapped as Seattle muck.

Buffer

Wetland 24C is situated in a residentially developed area. Single-family residential homes are to the west and East Lake Sammamish Parkway to the east. Wetland 24A is south of the wetland, but connectivity is disrupted by a residential driveway. A vegetated upland area occurs north of the wetland between the trail and East Lake Sammamish Parkway. Vegetation in the buffer consists primarily of Himalayan blackberry, red alder, black cottonwood, reed canarygrass, and giant horsetail with some conifers to the north.

Wetland Classification

Wetland 24C is classified as a palustrine forested/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/riverine under the HGM system (Null et al. 2000; Hruby 2004). Wetland 24C is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 34 points on the Washington State Wetland Rating System for Western Washington rating form (10 points for water quality functions, 10 points for hydrologic functions, and 14 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 24C where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 25A Subbasin: Monohon USFWS Classification: Palustrine Forested HGM Classification: Depressional/Riverine Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 25A-SP1, 25A-SP2 Stations: 400+00 to 403+00 Size: 0.25 acre

Wetland 25A is located on the east side of the trail between the trail and East Lake Sammamish Parkway (see Figure 3-2e). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by local area runoff, overbank flow of Stream 0155, and surface water from Wetland 25B. The tributary enters the wetland at the northeast corner through a culvert that flows under East Lake Sammamish Parkway. The tributary flows southwest through the wetland and exits to a culvert in the center of the wetland's west boundary. The culvert is piped west to Lake Sammamish. Wetland 25A also receives surface water from Wetland 25B to the north through a pipe under a residential driveway near East Lake Sammamish Parkway. A maintained ditch from the south may also contribute seasonal surface water. Inundation was observed through most of the wetland during field visits conducted in November 2007 and September 2013. This wetland has permanently flooded and seasonally flooded water regimes.

Vegetation

Wetland 25A has a forested vegetation community dominated by Pacific willow with red-osier dogwood, black twinberry, Sitka willow, reed canarygrass, Himalayan blackberry, slough sedge, small-fruited bulrush, cluster rose, and yellow flag. Duckweed is present in small pockets of standing water.

Soils

Soil in Wetland 25A was examined to a depth of 18 inches and consists of two layers. The upper layer is an 8-inch layer of very dark gray (10YR 3/1) silt loam. The lower layer is a black (10YR 2/1) loam. Soil in the areas is mapped as Norma sandy loam.

Buffer

Wetland 25A is situated in a residentially developed area. Single-family residences and the trail are to the west of the wetland and East Lake Sammamish Parkway is to the east. Beyond the parkway is a large wetland labeled as East Lake Sammamish #64 under King County's wetland inventory. Driveways disrupt connectivity between Wetland 25A and Wetland 25B to the north and a forested area to the south. Buffer is limited to small patches at the north and south end of the wetland and a narrow band running along the shoulder of the parkway. Buffer vegetation includes Himalayan blackberry, hedge false bindweed, reed canarygrass, and lawn with landscaped trees and shrubs.

Wetland Classification

Wetland 25A is classified as a palustrine forested wetland under the Cowardin et al. (1979) system and depressional/riverine under the HGM system (Null et al. 2000; Hruby 2004). Wetland 25A is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 46 points on the Washington State Wetland Rating System for Western Washington rating form (20 points for water quality functions, 12 points for hydrologic functions, and 14 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 25A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 25B

Subbasin: Monohon USFWS Classification: Palustrine Forested/Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 25B-SP1, 25B-SP2, 25B-SP3 Stations: 403+50 to 407+75 Size: 0.33 acre

Wetland 25B is located on the east side of the trail between the trail and East Lake Sammamish Parkway (see Figure 3-2e). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater and local area runoff. Soils were saturated during the wetland delineation. A swale runs north and south along the east side of the trail and drains the wetland through a culvert at the south end of the swale, which passes under a residential driveway and discharges into Wetland 25A. This wetland has seasonally flooded, occasionally flooded, and saturated only water regimes.

Vegetation

Wetland 25B has three vegetation communities: forested, scrub-shrub, and emergent. The forested community is dominated by Oregon ash with an understory of Himalayan blackberry and red-osier dogwood. The shrub community consists of black twinberry, rose, red-osier dogwood, Himalayan blackberry, Sitka willow, Douglas spirea (*Spiraea douglasii*), reed canarygrass, and Pacific willow. The emergent community consists of reed canarygrass, slough sedge, hedge false bindweed, giant horsetail, creeping buttercup, and field horsetail.

Soils

Two wetland soil pits were examined in Wetland 25B. The first soil pit (25B-SP1) was dug in an emergent vegetation community. Soil pit 25B-SP1 was examined to a depth of 17 inches and consists of two layers. The upper layer is a 6-inch layer of very dark grayish brown (10YR 3/2) gravelly silt loam. The lower layer is a very dark gray (10YR 3/1) silt loam with dark brown (10YR 3/3) redoximorphic features. The second soil pit (25B-SP3) was dug in a forested vegetation community. Soil pit 25B-SP3 was examined to a depth of 20 inches and consists of three layers. The upper layer is a 7-inch layer of black (10YR 2/1) loam. The middle layer is a 10-inch layer of dark gray (2.5Y 4/1) clay loam with strong brown (7.5YR 4/6) redoximorphic features. The lower layer is a gray (10YR 5/1) clay loam with strong brown redoximorphic features. Soil in the area is mapped as Norma sandy loam.

Buffer

Wetland 25B is situated in a residentially developed area. Single-family residences and the trail are to the west of the wetland and East Lake Sammamish Parkway is to the east. Beyond the parkway is a large wetland labeled as East Lake Sammamish #64 under King County's wetland inventory. Driveways disrupt connectivity between Wetland 25B and Wetland 25A to the south and Wetland 25C to the north. Vegetated buffer is limited to small patches of Himalayan blackberry and reed canarygrass at the south end of the wetland. Vegetation includes Himalayan blackberry, reed canarygrass, creeping buttercup, hedge false bindweed, Robert's geranium, stickywilly (*Galium aparine*), and curly dock (*Rumex crispus*). The buffer between the wetland and trail consists of maintained reed canarygrass, creeping buttercup, and Himalayan blackberry.

Wetland Classification

Wetland 25B is classified as a palustrine forested/palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 25B is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 48 points on the Washington State Wetland Rating System for Western Washington rating form (18 points for water quality functions, 10 points for hydrologic functions, and 18 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 25B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 25C Subbasin: Thompson USFWS Classification: Palustrine Forested/Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 10C-SP1 Stations: 408+50 to 411+00 Size: 0.25 acre

Wetland 25C is located on the east side of the trail between the trail and East Lake Sammamish Parkway (see Figure 3-2e). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is supported by seasonally high groundwater and local area runoff. Soils were saturated during the wetland delineation. A ditch runs north and south along the east side of the wetland. A culvert located at the north end of the ditch passes under a driveway and discharges into Wetland 25F and Ebright Creek. This wetland has seasonally flooded and saturated only water regimes.

Vegetation

Wetland 25C has two vegetation communities: forested and emergent. The forested community is dominated by red alder and Scouler's willow. The understory is vegetated with Himalayan blackberry, snowberry (*Symphoricarpos albus*), red-osier dogwood, rose, black twinberry, and bracken fern. The emergent community is dominated by reed canarygrass.

Soils

Soil in Wetland 25C was examined to a depth of 18 inches and consists of two layers. The upper layer is a 10-inch layer of disturbed soil that is very dark gray (10YR 3/1) and grayish brown (10YR 5/2) loam with yellowish brown (10YR 5/6) redoximorphic features. The lower layer is a very dark gray (10YR 3/1) silt loam. Soil in the area is mapped as mixed alluvial land.

Buffer

Wetland 25C is situated in a residentially developed area. Single-family residences and the trail are to the west of the wetland and East Lake Sammamish Parkway is to the east. Beyond the parkway is a large wetland labeled as East Lake Sammamish #64 under King County's wetland inventory. Driveways disrupt connectivity between Wetland 25C and Wetland 25B to the south and Wetland 25F to the north. Buffer around Wetland 25C is limited to the roadside shoulder of East Lake Sammamish Parkway and the maintained edges of the driveway and trail. Vegetation in the buffer consists primarily of reed canarygrass.

Wetland Classification

Wetland 25C is classified as a palustrine forested/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 25C is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 42 points on the Washington State Wetland Rating System for Western Washington rating form (14 points for water quality functions, 14 points for hydrologic functions, and 14 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 25C where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 25F Subbasin: Thompson USFWS Classification: Palustrine Forested HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 25F-SP1 Stations: 411+25 to 412+00 Size: 0.06 acre

Wetland 25F is located on the east side of the trail, immediately south of Ebright Creek, and between the trail and East Lake Sammamish Parkway (see Figure 3-2e). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater and local area runoff. The wetland drains into Ebright Creek. Surface water from Wetland 25C passes under a driveway to the south and flows north along the east side of the wetland in a ditch and discharges into Ebright Creek. This wetland has occasionally flooded and saturated only water regimes.

Vegetation

Wetland 25F has a forested vegetation community. Vegetation includes red alder, Sitka willow, and Pacific willow. Understory vegetation is dominated by red-osier dogwood with Himalayan blackberry, hedge false bindweed, reed canarygrass, creeping buttercup, ladyfern, western swordfern, and English holly (*llex aquifolium*).

Soils

Soil in Wetland 25F was examined to a depth of 18 inches and consists of two layers. The upper layer is a 10-inch layer of black (10YR 2/1) silt loam. The lower layer is a dark gray (10YR 4/1) sandy loam with (7.5Y 4/6) redoximorphic features. Soil in the area is mapped as mixed alluvial land.

Buffer

Wetland 25F is situated in a residentially developed area. Single-family residences and the trail are to the west of the wetland and East Lake Sammamish Parkway is to the east. Beyond the parkway is a large wetland. Driveways disrupt connectivity between Wetland 25F and Wetland 25C to the south. Wetland 25D is located to the southwest, but connectivity is disrupted by a residential driveway and the trail. Buffer around Wetland 25C is limited to a small area to the north of the wetland. Vegetation in this area is dominated by Himalayan blackberry and Sitka willow with one corkscrew willow, one western redcedar, and one ornamental plum. Lawn covers the area closest to the driveway. The buffer between the trail and the wetland is primarily composed of mowed reed canarygrass, creeping buttercup, and Himalayan blackberry.

Wetland Classification

Wetland 25F is classified as a palustrine forested wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 25F is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 29 points on the Washington State Wetland Rating System for Western Washington rating form (12 points for water quality functions, 3 points for hydrologic functions, and 12 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 25F where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 26A Subbasin: Monohon USFWS Classification: Palustrine Forested/Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Depressional/Riverine Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 26A-SP1, 26A-SP2, 26A-SP3 Stations: 421+25 to 431+50 Size: 0.91 acre

Wetland 26A is located on the west side of the trail between the trail and East Lake Sammamish Parkway, south of the intersection of East Lake Sammamish Parkway and Louis Thompson Road (see Figures 3-2e and 3-2f). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater and local area runoff. Zaccuse Creek flows through the wetland from a culvert that passes under East Lake Sammamish Parkway. The stream flows west through the wetland before entering a culvert and passes under the trail, then to another culvert under a roadway, eventually to Lake Sammamish. Inundation was observed at the north end of the wetland during site visits conducted in November 2007 and small areas of ponding were observed in September 2013. This wetland has seasonally flooded, occasionally flooded, and saturated only water regimes.

Vegetation

Wetland 26A has three vegetation communities: forested, scrub-shrub, and emergent. The forested community is dominated by Pacific willow, red alder, and red-osier dogwood with cascara and Sitka willow. The scrub-shrub community is dominated by red-osier dogwood, black twinberry, Douglas spirea, Himalayan blackberry, cluster rose, salmonberry, Sitka willow, and red alder. One paper birch (*Betula papyrifera*) is also growing in this community. The emergent community is dominated by reed canarygrass. Other species in the emergent area include giant horsetail, ladyfern, small-fruited bulrush, common rush, hedge false bindweed, and ornamental bamboo.

Soils

Soil in Wetland 26A (26A-SP1) was examined to a depth of 16 inches and consists of one layer. It is black (10YR 2/1) silt with no redoximorphic features. Soil in the area is mapped as Alderwood and Kitsap soils and mixed alluvial land.

Buffer

Wetland 26A is situated between the trail and East Lake Sammamish Parkway. Buffer is minimal to the east and west. West of the wetland between the trail and Lake Sammamish are single-family residences. A large forested wetland is located to the east of the wetland, but connectivity is disrupted by the parkway. A vegetated buffer exists to the north of the wetland. A small patch of upland buffer also exists at the south end of the wetland that includes a row of western redcedar. Vegetation in the buffer is primarily Himalayan blackberry and reed canarygrass with bigleaf maple and some Douglas fir to the north. The buffer between the trail and the wetland consists primarily of maintained herbaceous vegetation, reed canarygrass, and hedge false bindweed.

Wetland Classification

Wetland 26A is classified as a palustrine forested/palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/riverine under the HGM system (Null et al. 2000; Hruby 2004). Wetland 26A is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 47 points on the Washington State Wetland Rating System for Western Washington rating form (16 points for water quality functions, 12 points for hydrologic functions, and 19 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 26A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 26B

Subbasin: Monohon USFWS Classification: Palustrine Emergent HGM Classification: Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 26B-SP1, 26B-SP2 Stations: 425+25 to 425+50 Size: 0.02 acre

Wetland 26B is located on the west side of the trail north of Zaccuse Creek and approximately 800 feet south of the intersection of East Lake Sammamish Parkway and Louis Thompson Road (see Figure 3-2f). This wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater. No inlet or outlet exists. Soil saturation in the upper 12 inches was observed during site visits conducted in November 2007 and March 2014. This wetland has a saturated only water regime.

Vegetation

Wetland 26B is an emergent vegetation community. The area is maintained lawn including white clover (*Trifolium repens*), creeping bentgrass (*Agrostis stolonifera*), bluegrass (*Po asp*.), common velvetgrass, common dandelion (*Taraxacum officinale*), and small-fruited bulrush.

Soils

Soil in Wetland 26B was examined to a depth of 16 inches and consists of two layers. The upper layer is a 12-inch layer of black (10YR 2/1) sandy loam. The lower layer is a very dark grayish brown (2.5Y 4/2) sand with yellowish brown (10YR 5/6) redoximorphic features. Soil in the area is mapped as Alderwood and Kitsap soils.

Buffer

The area west of the wetland between the trail and Lake Sammamish is developed with single-family residences. Wetland 26A is located to the east, but connectivity is disrupted by the trail. Lawn, landscaped areas (e.g., rhododendrons, camellias, and magnolias), and gravel parking areas exist to the north and south of the wetland providing disturbed connectivity to Zaccuse Creek. Vegetation in the upland buffer includes maintained lawn, apple (*Malus* sp.), reed canarygrass, and giant horsetail.

Wetland Classification

Wetland 26B is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 26B is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 12 points on the Washington State Wetland Rating System for Western Washington rating form (4 points for water quality functions, 0 points for hydrologic functions, and 8 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 26B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 26C Subbasin: Monohon USFWS Classification: Palustrine Scrub-shrub/Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 26C-SP1, 26C-SP2, 26C-SP3 Stations: 423+25 to 424+25 Size: 0.03 acre

Wetland 26C is located on the west side of the trail south of Zaccuse Creek and is located entirely within the project area (see Figures 3-2e and 3-2f).

Hydrology

Wetland hydrology is maintained by seasonally high groundwater. Soil saturation in the upper 12 inches was observed during site visits conducted in October 2007 and March 2014, along with standing water in micro-depressions. This wetland has a saturated only water regime.

Vegetation

Wetland 26C has two vegetation communities: scrub-shrub and emergent. A majority of the wetland is a maintained lawn (emergent community), with creeping buttercup, bluegrass, dandelion, bentgrass, and white clover. The scrub-shrub community is dominated by red-osier dogwood, Pacific ninebark, rose, Douglas spirea, and willow. Other species include Himalayan blackberry, reed canarygrass, small-fruited bulrush, creeping buttercup, and giant horsetail.

Soils

Soil in Wetland 26C was examined to a depth of 16 inches and consists of a single layer of very dark gray (10YR 3/1) gravelly sandy loam with (10YR 3/6) redoximorphic features. Soil in the area is mapped as Alderwood and Kitsap soils.

Buffer

East Lake Sammamish Shore Lane SE borders the wetland to the west and single-family residences exist between East Lake Sammamish Shore Lane SE and Lake Sammamish. The trail exists on the eastern border of the wetland. Vegetated buffer with gravel parking areas is present on the north and south ends of the wetland providing disturbed connectivity to Zaccuse Creek. Vegetation in the buffer between trail and wetland includes Pacific silver fir (*Abies amabilis*), apple, reed canarygrass, maintained lawn, Himalayan blackberry, and giant horsetail.

Wetland Classification

Wetland 26C is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 26C is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 21

points on the Washington State Wetland Rating System for Western Washington rating form (4 points for water quality functions, 6 points for hydrologic functions, and 11 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 26C where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 26D Subbasin: Monohon USFWS Classification: Palustrine Scrub-shrub/Palustrine Emergent HGM Classification: Riverine/Lake-fringe Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 26D-SP1 Stations: 431+75 to 432+75 Size: Approximately 0.13 acre

Wetland 26C is located on the west side of the trail associated with Unnamed Stream 9, located partially within the project area and sloping west to Lake Sammamish (see Figure 3-2f). This wetland is part of a wetland/stream restoration site with large woody debris (LWD), recent plantings, and irrigation on site. The buffer to the north has also been planted between the wetland and nearby house.

Hydrology

Unnamed Stream 9 and Lake Sammamish are the primary sources of hydrology, along with a shallow groundwater table. Unnamed Stream 9 flows out of a pipe under the trail at the northeast corner of the wetland, then flows south along the east boundary, turning west in the southeast corner where it continues to Lake Sammamish. Soil saturation to the surface, along with standing water in micro-depressions, was observed during the site visit conducted in March 2014. Water was also flowing in the channel of Unnamed Stream 9. This wetland has occasionally flooded and saturated-only water regimes.

Vegetation

Wetland 26D has two vegetation communities: scrub-shrub and emergent. Planted vegetation includes red-osier dogwood, Pacific ninebark, and ovate spikerush (*Eleocharis ovata*). Other species include red alder (primarily saplings with few large trees near stream outlet to lake), willow, American speedwell, reed canarygrass, common rush, watercress, small-fruited bulrush, and hardstem bulrush (*Schoenoplectus acutus*).

Soils

Soil in Wetland 26D consists of a black (10YR 2/1) gravelly silt loam over a light brownish gray (2.5Y 6/2) with strong brown (7.5YR 5/8) redoximorphic features. Soil in the area is mapped as Ragnar-Indianola association.

Buffer

A rock wall and quarry spalls immediately border the wetland and stream system along the south and east edges. Single-family residences exist farther to the south and north and the trail is to the east. The planted buffer to the north consists of western redcedar, Douglas fir, Sitka spruce, rose, tall Oregon grape (*Mahonia aquifolium*), red-osier dogwood, and willow.

Wetland Classification

Wetland 26D is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and riverine/lake-fringe under the HGM system (Null et al. 2000; Hruby 2004). Wetland 26D is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 48 points on the Washington State Wetland Rating System for Western Washington rating form (16 points for water quality functions, 18 points for hydrologic functions, and 14 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 26D where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 28A Subbasin: Panhandle USFWS Classification: Palustrine Forested HGM Classification: Depressional/Riverine Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 28A-SP1, 28A-SP2 Stations: 448+75 to 450+50 Size: 0.09 acre

Wetland 28A is located on the east side of the trail between the trail and East Lake Sammamish Parkway and approximately 800 feet north of the intersection of East Lake Sammamish Parkway and NE 7th Court, associated with Unnamed Stream 10 (see Figures 3-2f and 3-2g). The wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by groundwater seeps and the overbank flow of Unnamed Stream 10. Water from seeps is retained in a ditch along the toe of the trail prism. The stream flows from a culvert that passes under East Lake Sammamish Parkway and discharges into the wetland. The stream flows northwest through the wetland and exits through a culvert passing west under the trail. Ditches running along the toe of the trail prism drain the northern and southern portions of the wetland and feed into Unnamed Stream 10. Soil saturation in the upper 12 inches was observed during site visits conducted in November 2007. This wetland has permanently flooded and saturated only water regimes.

Vegetation

Wetland 28A has a forested vegetation community dominated by red alder, Himalayan blackberry, and salmonberry. A layer of emergent vegetation is present in the understory and includes giant horsetail, reed canarygrass, and common ladyfern.

Soils

Soil in Wetland 28A was examined to a depth of 18 inches and consists of three layers. The upper layer is a 10-inch layer of very dark gray (10YR 3/1) loam. The lower layers are a 2-inch layer of very dark gray loamy sand over a black (10YR 2/1) sandy loam. Soil in the area is mapped as Alderwood and Kitsap soil.

Buffer

Buffer around Wetland 28A is limited by residential development. Single-family residences are found to the west of the trail. East Lake Sammamish Parkway is to the east of the wetland. The areas north and south of the wetland are paved and used for parking. A small patch of upland buffer is found at the northeast corner of the wetland. Vegetation in the buffer is dominated by Himalayan blackberry, red alder, and western swordfern. The buffer between the trail and the wetland consists primarily of maintained herbaceous vegetation.

Wetland Classification

Wetland 28A is classified as a palustrine forested wetland under the Cowardin et al. (1979) system and depressional/riverine under the HGM system (Null et al. 2000; Hruby 2004). Wetland 28A is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 27 points on the Washington State Wetland Rating System for Western Washington rating form (8 points for water quality functions, 6 points for hydrologic functions, and 13 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50. 290).

Wetland Determination

Biologists flagged the boundary of Wetland 28A where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 28B

Subbasin: Panhandle USFWS Classification: Palustrine Scrub-Shrub HGM Classification: Depressional/Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 28B-SP1, 28B-SP2 Stations: 436+75 to 437+50 Size: 0.02 acre

Wetland 28B is located on the east side of the trail, approximately 300 feet north of the intersection of East Lake Sammamish Parkway and Louis Thompson Road (see Figure 3-2f). The wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by a culvert that passes under East Lake Sammamish Parkway and discharges into the wetland. Water flows from east to west through the wetland and then flows south in a ditch that runs along the toe of the trail prism. The water then flows through a culvert that passes under the trail and is piped to Lake Sammamish. Soil saturation was observed in the upper 12 inches during site visits conducted in November 2007. This wetland has a saturated only water regime.

Vegetation

Wetland 28B contains a palustrine scrub-shrub vegetation community. Vegetation in the wetland includes Douglas spirea, Himalayan blackberry, cluster rose, and reed canarygrass.

Soils

Soil in Wetland 28B was examined to a depth of 18 inches and consists of two layers. The upper layer is a 12-inch layer of a very dark gray (10YR 3/1) silt loam. The lower layer is very dark gray (10YR 3/1) silt loam with red (2.5YR 4/6) redoximorphic features. Soil in the area is mapped as mixed alluvial land.

Buffer

Wetland 28B is located in a vegetated corridor between the trail and East Lake Sammamish Parkway. Forested upland exists to the south and shrubs with few trees are to the north. Vegetation in the upland buffer includes Himalayan blackberry, bigleaf maple, giant horsetail, and reed canarygrass. The buffer to the south provides connectivity to Wetland 26A. East Lake Sammamish Parkway is located to the east of the wetland. The trail, East Lake Sammamish Shore Lane, and single-family residences are to the west of the wetland. The buffer between the trail and the wetland consists primarily of maintained reed canarygrass.

Wetland Classification

Wetland 28B is classified as a palustrine scrub-shrub wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 28B is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 21 points on the Washington State Wetland Rating System for Western Washington rating form (12 points for water quality functions, 3 points for hydrologic functions, and 6 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 28B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 28C Subbasin: Panhandle USFWS Classification: Palustrine Scrub-shrub/Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 28C-SP1 Stations: 455+50 to 456+25 Size: 0.02 acre

Wetland 28C is located on the east side of the trail approximately 800 feet south of the intersection of East Lake Sammamish Parkway and Inglewood Hill Road (see Figure 3-2g). The entire wetland is located entirely within the project area.

Hydrology

Wetland hydrology is primarily maintained by local area runoff from the trail and the slope to the east. Two pipes are also located at the north end of the wetland. The wetland drains into an Unnamed Stream 13, which flows west through the wetland from a culvert passing under East Lake Sammamish Parkway. The stream continues west into a culvert that passes under the trail. Soil saturation in the upper 12 inches was observed during site visits conducted in November 2007. Wetland 28C has saturated only and occasionally flooded water regimes.

Vegetation

Wetland 28C contains scrub-shrub and emergent vegetation communities. The scrub-shrub community consists of cotoneaster creeping into the wetland from the edge and buffer. The emergent community is dominated by giant horsetail and common ladyfern. Other species include small-fruited bulrush, creeping buttercup, watercress, little western bittercress, climbing nightshade, European mountain ash (*Sorbus aucuparia*), and Himalayan blackberry.

Soils

Soil in Wetland 28C was examined to a depth of 18 inches and consists of two layers. The upper layer is a 12-inch layer of very dark gray (10YR 3/1) silt loam. The lower layer is a 6-inch layer of very dark gray gravelly loam. Soil in the area is mapped as mixed alluvial land.

Buffer

Wetland 28C is located in a narrow corridor between the trail and East Lake Sammamish Parkway; most of the surrounding area is developed. Gravel parking areas exist to the north, east, and south. The trail is located to the west of the wetland. The small vegetated areas are maintained consisting of creeping buttercup, giant horsetail, hedge false bindweed, and common ladyfern.

Wetland Classification

Wetland 28C is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 28C is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 28 points on the Washington State Wetland Rating System for Western Washington rating form (12 points for water quality functions, 3 points for hydrologic functions, and 13 points for habitat functions) (see

Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 28C where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 28D Subbasin: Panhandle USFWS Classification: Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 28D-SP1, 28D-SP2 Stations: 453+00 to 453+25 Size: <0.01 acre

Wetland 28D is small depression located on the east side of the trail, between the trail and a gravel driveway, and approximately 1,200 feet north of the intersection of East Lake Sammamish Parkway and NE 7th Court (see Figure 3-2g). The entire wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by local area runoff and a shallow groundwater table. A catch basin is located south of the wetland and water discharges to Unnamed Stream 11 and Wetland 29C. Soil saturation to the surface was observed during site visits conducted in November 2007 and September 2013. Inundation was also observed in September 2013. Wetland 28D has saturated only and permanently flooded water regimes.

Vegetation

Wetland 28D contains an emergent vegetation community. Dominant vegetation consists primarily of reed canarygrass, mowed Himalayan blackberry, and common duckweed in standing water. Other vegetation present includes giant horsetail, fringed willowherb, and hedge false bindweed.

Soils

Soil in wetland 28D was examined to a depth of 18 inches and consists of a single layer of black (10YR 2/1) gravelly loam. Soil in the area is mapped as a mixed alluvial land.

Buffer

Wetland 28D is surrounded by a gravel driveway to the north, east, and south. The trail borders the wetland to the west. Buffer around the wetland is a few feet wide and vegetation consists of maintained Himalayan blackberry, English ivy, hedge false bindweed, and some giant horsetail.

Wetland Classification

Wetland 28D is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 28D is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 16 points on the Washington

State Wetland Rating System for Western Washington rating form (2 points for water quality functions, 5 points for hydrologic functions, and 9 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 28D where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 28E

Subbasin: Panhandle USFWS Classification: Palustrine Emergent HGM Classification: Depressional Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 28E-SP1, 28E-SP2 Stations: 445+50 to 446+50 Size: 0.02 acre

Wetland 28E is a closed depression located on the east side of the trail, between the trail and East Lake Sammamish Parkway, and approximately 450 feet north of the intersection of East Lake Sammamish Parkway and NE 7th Court (see Figures 3-2f and 3-2g). The entire wetland is located entirely within the project area.

Hydrology

Wetland hydrology is maintained by local area runoff and a shallow groundwater table. No surface water inlets or outlets were identified during field investigations. Soil saturation to the surface, pockets of inundation, and standing water in the ditch were observed during the November 2013 site visit. Wetland 28E has a saturated only water regime.

Vegetation

Wetland 28E has an emergent vegetation community primarily dominated by reed canarygrass with American speedwell in the ditch. Common ladyfern, hedge false bindweed, and cluster rose are also present.

Soils

Soil in Wetland 28E consists of a 6-inch black (10YR 2/1) sandy loam over a very dark gray (10YR 3/1) gravelly sandy loam with dark yellowish brown (10YR 3/6) redoximorphic features and cobbles. Soil in the area is mapped as Everett very gravelly sandy loam.

Buffer

Wetland 28E is located in a narrow corridor between the trail and East Lake Sammamish Parkway; most of the surrounding area is developed. Disturbed and residential areas are located to the north. The trail is located to the west. Vegetated areas to the east and south are dominated by bigleaf maple in the overstory and Himalayan blackberry in the understory. Other species include red alder, thimbleberry, cluster rose, beaked hazelnut, giant horsetail, and bracken fern.

Wetland Classification

Wetland 28E is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and depressional under the HGM system (Null et al. 2000; Hruby 2004). Wetland 28E is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 25 points on the Washington State Wetland Rating System for Western Washington rating form (8 points for water quality functions, 9 points for hydrologic functions, and 8 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 28E where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 29B Subbasin: Panhandle USFWS Classification: Palustrine Emergent HGM Classification: Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 29B-SP1, 29B-SP2 Stations: 457+25 to 458+25 Size: Approximately 0.03 acre

Wetland 29B is a maintained yard located on the west side of the trail approximately 700 feet south of the intersection of East Lake Sammamish Parkway and Inglewood Hill Road (see Figure 3-2g). Wetland 29B extends outside of the project area to the west.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater. The wetland slopes toward Lake Sammamish. Saturation in the upper 12 inches was observed during site visits conducted in November 2007 and March 2014. This wetland has a saturated only water regime.

Vegetation

Wetland 29B contains an emergent vegetation community that is maintained as lawn. Identified species include common velvetgrass, swordleaf rush (*Juncus ensifolius*), creeping buttercup, giant horsetail, white clover, narrowleaf plantain (*Plantago lanceolata*), and small-fruited bulrush.

Soils

Soil in Wetland 29B was examined to a depth of 16 inches and consists of two layers. The upper layer is a 6-inch black (10YR 2/1) loam. The lower layer is a very dark grayish brown (10YR 3/2) gravelly sandy loam with light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/8) redoximorphic features and cobbles. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 29B is situated in a residentially developed area. Single-family residences and associated yards are located to the north, west, and south. Surrounding upland buffer consists of maintained yards

vegetated with unidentified grasses and ornamental shrubs. Wetland 29D is located to the east of the wetland, but connectivity is disrupted by the trail.

Wetland Classification

Wetland 29B is classified as a palustrine emergent wetland under the Cowardin et al. (1979) system and slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 29B is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 7 points on the Washington State Wetland Rating System for Western Washington rating form (2 points for water quality functions, 0 point for hydrologic functions, and 5 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 29B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present within the project area. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 29C Subbasin: Panhandle USFWS Classification: Palustrine Forested HGM Classification: Lake-fringe/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 29C-SP1, 29C-SP2 Stations: 452+75 to 454+00 Size: Approximately 0.06 acre

Wetland 29C is located on the west side of the trail approximately 1,000 feet north of the intersection of East Lake Sammamish Parkway and NE 7th Court (see Figure 3-2g). Wetland 29C extends outside of the project area to the west.

Hydrology

Wetland hydrology is maintained by seasonally high groundwater. The wetland is sloped and drains toward Lake Sammamish. An Unnamed Stream 11 flows west through the wetland from a culvert that passes under the trail. Soil saturation in the upper 12 inches was observed during site visits conducted in November 2007 and March 2014. Wetland 29C has a saturated only water regime.

Vegetation

Wetland 29C contains a forested vegetation community with understory shrubs. The vegetation in the wetland is dominated by black cottonwood, Pacific willow, salmonberry, Pacific ninebark, Himalayan blackberry, English ivy, giant horsetail, and scouring rush. Other species include red alder, black twinberry, red-osier dogwood, slough sedge, and common ladyfern.

Soils

Soil in Wetland 29C was examined to a depth of 16 inches and consists of two layers. The upper layer is a 12-inch layer of black (10YR 2/1) peaty loam. The lower layer is a mixed sand and gravel. Soil in the area is mapped as Kitsap silt loam.

Buffer

Wetland 29C is located in a residentially developed area. Single-family residences exist to the north and the south. The wetland is bordered on the west by Lake Sammamish and the trail is located to the east. Some small patches of vegetated upland buffer exist at the northeast and southeast corner of the wetland. Vegetation in the buffer includes giant horsetail, field horsetail, English ivy, salmonberry, red alder, bigleaf maple, Douglas fir, Himalayan blackberry, western swordfern, and bamboo (*Bambusa vulgaris*) near the stream.

Wetland Classification

Wetland 29C is classified as a palustrine forested wetland under the Cowardin et al. (1979) system and lake-fringe/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 29C is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 45 points on the Washington State Wetland Rating System for Western Washington rating form (18 points for water quality functions, 12 points for hydrologic functions, and 15 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 29C where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present within the project area. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 29D Subbasin: Panhandle USFWS Classification: Palustrine Scrub-Shrub/Palustrine Emergent HGM Classification: Depressional/Slope Ecology Rating: Category IV City of Sammamish Rating: Category IV Data Plots: 29D-SP1, 29D-SP2, 29D-SP3 Stations: 457+75 to 460+50 Size: 0.08 acre

Wetland 29D is located on the east side of the trail, between the trail and East Lake Sammamish Parkway, approximately 600 feet south of the intersection of East Lake Sammamish Parkway and Inglewood Hill Road (see Figure 3-2g). Wetland 29D extends outside the trail right-of-way to the east.

Hydrology

Wetland hydrology is maintained by groundwater seeps and local area runoff. A culvert discharges water into the wetland at the south end. Water collects in a ditch located at the toe of the trail prism. Water flows both north and south in the ditch. At the north end, water passes through a culvert under a residential driveway, and feeds into Stream 0143L (South Fork). At the south end, water is conveyed under the trail to Wetland 29B. Water from the groundwater seeps and inundation in the ditch was observed during the September 2103 site visits. The sloped portion of the wetland has a saturated only water regime, while the ditched portion has an occasionally flooded water regime.

Vegetation

Wetland 29D has two vegetation communities: scrub-shrub and emergent. The scrub-shrub community consists of Himalayan blackberry and beaked hazelnut. Vegetation in the emergent community includes common ladyfern, small-fruited bulrush, giant horsetail, and English ivy.

Soils

Two soil pits were examined in Wetland 29D. The first wetland soil pit (W29D-SP1) was dug in the emergent vegetation community and consists of a 12-inch layer of black (10YR 2/1) gravelly loam. The second soil pit was dug in the scrub-shrub vegetation community and consists of an 18-inch layer of black (10YR 2/1) mucky loam. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 29D is situated in a vegetated corridor between the trail and East Lake Sammamish Parkway. The trail is adjacent to the wetland on the western boundary. Vegetated buffer exists to the south and to the east between the wetland and the parkway. Vegetation includes beaked hazelnut, bigleaf maple, salmonberry, black cottonwood, and Pacific madrone. Wetland 30B exists to the north; however, connectivity is disrupted by a residential driveway.

Wetland Classification

Wetland 29D is classified as a palustrine scrub-shrub/palustrine emergent wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 29D is rated a Category IV according to the City of Sammamish and Ecology. This wetland scored 25 points on the Washington State Wetland Rating System for Western Washington rating form (12 points for water quality functions, 1 point for hydrologic functions, and 12 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category IV wetlands in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 29D where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

Wetland 30B

Subbasin: Panhandle USFWS Classification: Palustrine Forested HGM Classification: Depressional/Slope Ecology Rating: Category III City of Sammamish Rating: Category III Data Plots: 30B-SP1, 30B-SP2 Stations: 461+00 to 463+50 Size: 0.20 acre

Wetland 30B is located on the east side of the trail approximately 200 feet south of the intersection of East Lake Sammamish Parkway and Inglewood Hill Road (see Figure 3-2g). The wetland and buffer has been planted as part of a wetland mitigation effort for the interim trail. Wetland 30B extends outside of the trail right-of-way to the east.

Hydrology

Wetland hydrology is maintained primarily by groundwater seeps from the slope to the east. Stream 0413L discharges into the wetland and diverges into two channels flowing north (North Fork) and south (South Fork) along the toe of the trail prism. The streams pass under the trail through culverts located at the north and south ends of the wetland and flow west toward Lake Sammamish. Soil saturation at the surface was observed throughout most of the wetland during site visits conducted in January 2008 and September 2013. Wetland 30B has saturated only and seasonally inundated water regimes.

Vegetation

Wetland 30B has a forested vegetation community dominated by red alder, red-osier dogwood, and Pacific ninebark. Other species include Oregon ash, western redcedar, salmonberry, Himalayan blackberry, common ladyfern, climbing nightshade, water parsley (*Oenanthe sarmentosa*), reed canarygrass, giant horsetail, scouring rush, and bigleaf maple. Shrubs and trees have been planted in the wetland.

Soils

Soil in Wetland 30B was examined to a depth of 17 inches and consists of three layers. The upper layer is a 5-inch layer of black (10YR 2/1) silt loam. The middle layer is a 5-inch layer of very dark gray (10YR 3/1) sandy gravelly loam. The lower layer is black (7.5YR 2. 5/1) muck. Soil in the area is mapped as Alderwood gravelly sandy loam.

Buffer

Wetland 30B is situated in a vegetated corridor between the trail and East Lake Sammamish Parkway. The trail borders the wetland to the west and a residential driveway is to the south. A vegetated upland buffer exists to the north and the east. Vegetation in the buffer includes salmonberry, Himalayan blackberry, western swordfern, trailing blackberry, bigleaf maple, and giant horsetail. The buffer to the west (between the wetland and the trail) is maintained herbaceous vegetation. Wetland 29D is located to the south of the wetland, but connectivity is disrupted by a driveway.

Wetland Classification

Wetland 30B is classified as a palustrine forested wetland under the Cowardin et al. (1979) system and depressional/slope under the HGM system (Null et al. 2000; Hruby 2004). Wetland 30B is rated a Category III according to the City of Sammamish and Ecology. This wetland scored 46 points on the Washington State Wetland Rating System for Western Washington rating form (22 points for water quality functions, 10 points for hydrologic functions, and 14 points for habitat functions) (see Appendix B). The required buffer width is 50 feet for Category III wetlands scoring less than 20 points for habitat functions in the city of Sammamish (SMC 21A.50.290).

Wetland Determination

Biologists flagged the boundary of Wetland 30B where indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were present. The wetland edge generally corresponds with a topographic break where one or more of the wetland indicators was lacking.

3.3 Streams

Eighteen stream crossings were identified in the project area (Table 3-3; Figures 3-2a through 3-2g). Most of the streams in the South Sammamish Segment B project area are small and perennial, but little public resource information is available. Generally, these are short streams with silt or sand substrates that flow through culverts or conduits that are barriers to fish passage. For the majority of these streams, information is lacking on fish presence or absence. Field reconnaissance was used to determine the quality and quantity of available salmonid habitat (where access was allowed); therefore, the likelihood of fish use was assessed qualitatively based on the professional judgment of Parametrix biologists familiar with local hydrologic and fish habitat conditions. This approach was conservative because it is extremely unlikely that all streams that meet the criteria for presumed fish presence and/or contain fish habitat features are currently occupied.

Stream		Stream		
Name	Station	Classification ^a	Buffer Width ^b (feet)	Fish Use
Unnamed Stream 4	316+20	F / nd	150	Probable
Unnamed Stream 5	316+95	F / Np	150	Probable
Unnamed Stream 6	356+90	F / low	150	Potential
Unnamed Stream 7	367+00	F / low	150	Unlikely
Pine Lake Creek	379+10, 379+15	F/F	150	Yes
Unnamed Stream 8 (South Fork)	384+25	F / nd	150	Potential
Unnamed Stream 8 (North Fork)	386+60	F / nd	150	Potential
Stream 0155	401+75	F/F	150	Unlikely
Ebright Creek	411+85, 411+90	F/F	150	Yes
Zaccuse Creek	424+60	F/F	150	Yes
Unnamed Stream 9	432+80	Np / Np	75	Unlikely
George Davis	441+35, 441+40	F/F	150	Yes
Unnamed Stream 10	449+95	F / low	150	Potential
Unnamed Stream 11	452+95	F / low	150	Potential
Unnamed Stream 12	454+55	NAc	NAd	Potential
Unnamed Stream 13	455+80	F / low	150	Potential
Stream 0143L (South Fork)	460+25	F / low	150	Potential
Stream 0143L (North Fork)	464+25	F / low	150	Potential

Table 3-3. Summary of Streams Crossing the Project Area

^a SMC 21A.15.1240 / WAC 222-16-031; F = Fish-bearing; Np = Non-fish-bearing, perennial; NA = Not Applicable; low = low probability of fish use, based on channel width, gradient, and or catchment basin size; nd = insufficient data to determine probability of fish use per criteria in WAC 222-16-031.

^b SMC 21A.50.330

^c Stream is piped entirely in project area.

^d No stream buffer in project area because stream is piped from East Lake Sammamish Parkway to Lake Sammamish.

All of the drainage structures in the project area, including the ones that convey the streams identified in this report, were evaluated for their suitability for future fish passage improvements (Parametrix 2015). Several of these streams were removed from consideration for structure replacement, based on a lack of characteristics (hydrology, catchment area, adequate channel, and buffer width, etc.) that could support a viable enhanced stream or restore a former stream. Nonetheless, the 18 streams identified in this analysis meet the definition of "streams" as specified in SMC 21A.15.1240.

In addition to specifying the classification of each stream according to the criteria in SMC 21A.15.1240, Table 3-3 also provides information about how each stream would be classified under the WDNR interim water typing system (WAC 222-16-031), based on WDNR stream typing maps and field observations (Parametrix 2015).

Unnamed Stream 4 Subbasin: Monohon Stream Classification: Type F Station: 316+20

Unnamed Stream 4 is the southernmost stream in the South Segment B project area, near Unnamed Stream 5 (see Figure 3-2b). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway to the east. It also receives water from Wetland 15BC. The stream channel flows north from a culvert into Wetland 15BC, then turns west to a pipe under the Interim Use Trail. After emerging from the pipe under the trail, the stream flows off site on the adjacent property in an open channel and a short distance through two pipes before emptying to Lake Washington. Riparian vegetation consists of lawn, English ivy, disturbed areas from adjacent property owners, a few deciduous and coniferous trees, salmonberry, scouring rush, and Wetland 15BC. Unnamed Stream 4 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Unnamed Stream 5 Subbasin: Monohon Stream Classification: Type F Station: 316+95

Unnamed Stream 5 is in the southern portion of the South Segment B project area, near Unnamed Stream 4 (see Figure 3-2b). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway to the east. It also receives water from Wetlands 15BC and 15A. The stream channel flows south from a culvert into Wetland 15BC, then turns west to a pipe under the Interim Use Trail. After emerging from the pipe under the trail, the stream flows along the south side of Wetland 15A before emptying to Lake Washington. Riparian vegetation consists of lawn, English ivy, disturbed areas from adjacent property owners, a few deciduous and coniferous trees, and Wetlands 15A and 15BC. Unnamed Stream 5 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Unnamed Stream 6 Subbasin: Monohon Stream Classification: Type F Station: 356+90

Unnamed Stream 6 is in the southern portion of the South Segment B project area, near the intersection of East Lake Sammamish Place SE and SE 16th Street (see Figure 3-2c). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Place SE and East Lake Sammamish Parkway SE to the southeast. It also receives water from Wetlands 21B and 21AC. The stream enters the project area from the southeast into Wetland 21B, then flows into a pipe under the Interim Use Trail. After emerging from the pipe under the trail, the stream continues in a landscaped channel in Wetland 21AC before emptying to Lake Washington. Riparian vegetation consists of native forested

wetland vegetation (Wetland 21B) and landscaped yards and lawns. Unnamed Stream 6 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Unnamed Stream 7 Subbasin: Monohon Stream Classification: Type F Station: 367+00

Unnamed Stream 7 is north of the intersection of East Lake Sammamish Parkway SE and SE 14th Street, south of Pine Lake Creek (see Figure 3-2d). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE to the east. The stream enters the project area from the east, flows adjacent to a small portion of Wetland 22AB, then west under the Interim Use Trail through a pipe. After emerging from the pipe under the trail, the stream continues through developed properties before emptying to Lake Washington. Riparian vegetation consists of native forested wetland vegetation (Wetland 22AB) to the southeast, some trees with an understory of Himalayan blackberry to the northeast, and developed residential properties west of the trail. Unnamed Stream 7 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Pine Lake Creek Subbasin: Pine Lake Stream Classification: Type F Stations: 379+10, 379+15

Pine Lake Creek is a 2.84-mile-long stream in the Pine Lake subbasin. WDFW (2016a) indicates that kokanee (*Oncorhynchus nerka*), coho (*O. kisutch*), and winter-run steelhead (*O. mykiss*) have been documented in the stream; the presence of sockeye⁴ and fall-run Chinook salmon (*O. tshawytscha*) has been modeled. Records indicate that the lower reaches of Pine Lake Creek support spawning by late-run kokanee salmon (Berge and Higgins 2003). Sockeye salmon or stray Chinook salmon may also use the lower reaches of the stream. Resident cutthroat trout (*O. clarki*) and rainbow trout (*O. mykiss*) are reported to spawn and rear throughout the stream to its headwaters, with resident-only fish present above river mile (RM) 1.8 (King County 1990). This likely refers to Kanim Creek (a tributary to Pine Lake Creek) because the outlet of Pine Lake typically dries up in the late summer and fall, leaving a dry channel at least several hundred yards to the site of a now-removed outlet screen structure (WDFW file records, Mill Creek). Excellent riffle/pool habitat remains in the lower reaches, especially where the stream descends from the plateau to Lake Sammamish. During stream surveys in 2001 and 1999, no fish were observed in the stream within 100 feet on either side of the project corridor.

The Lake Sammamish Kokanee Work Group (2014) identifies Pine Lake Creek as a primary spawning stream for kokanee, one of four streams in the Lake Sammamish basin that has supported the vast majority of spawning by late-run kokanee in recent years. Replacement or improvement of the culverts under the Interim Use Trail and at East Lake Sammamish Shore Lane SE is included on a list of suggested

⁴ Sockeye salmon and kokanee are two forms of the same species. Sockeye are anadromous, migrating to marine waters before returning to freshwater to spawn. Kokanee, in contrast, remain in stream and lake habitats their entire lives.

stream restoration and enhancement projects needed to help improve the health of native kokanee populations (Lake Sammamish Kokanee Work Group 2014).

At the Interim Use Trail (i.e., the former railbed), the stream is diverted under the railroad ballast through two 36-inch concrete culverts. During field surveys conducted for this study, one of the culverts was found to be partially filled with gravel at the upstream opening. The WDFW Fish Passage and Diversion Screening Inventory Database identifies these culverts as a partial barrier to fish passage. The stream experiences 25- and 100-year flood flows of 64 and 78 cubic feet per second (cfs), respectively. Approximately 150 feet downstream of the Interim Use Trail, the stream passes through a 36-inch round concrete culvert under East Lake Sammamish Shore Lane. The stream empties to Lake Sammamish approximately 500 feet downstream of the Interim Use Trail (see Figure 3-2d).

Two root wads are present in the stream channel immediately downstream of the Interim Use Trail. In 1999, the King County Department of Natural Resources and Parks placed approximately 10 logs in and across the stream channel in this reach and planted riparian vegetation in an effort to increase habitat diversity. Downstream of East Lake Sammamish Shore Lane, the King County Department of Natural Resources and Parks has placed eight 4-inch pieces of LWD within the stream, as part of a restoration project. Riparian vegetation consists of black cottonwood, reed canarygrass, giant horsetail, ferns, and Himalayan blackberry. Pine Lake Creek is associated with Wetlands W24A and W24B.

Channel morphology within 100 feet of the corridor consists of riffle/glide/pool combinations. Substrate composition is suitable for salmonid spawning upstream of the Interim Use Trail, with cobble and gravel as the predominant substrate. However, the plunge pool immediately downstream of the Interim Use Trail culverts appears to contain only silt and sand.

Approximately 50 feet upstream of the Interim Use Trail, the stream passes under East Lake Sammamish Parkway, flowing through a 4-foot by 3-foot concrete box culvert and a 36-inch round corrugated metal pipe. All of the streamflow appears to pass through the box culvert, with no flow in the pipe. In the pool located downstream of the box culvert outlet, two large root wads provide bank stabilization and instream fish habitat. The WDFW Fish Passage and Diversion Screening Inventory Database identifies the culvert under East Lake Sammamish Parkway as a total barrier to fish passage.

Pine Lake Creek is classified as a Type F stream with a required buffer width of 150 feet (SMC 21A.50.330).

Unnamed Stream 8 (South Fork, North Fork) Subbasin: Monohon Stream Classification: Type F Stations: 384+25, 386+60

Unnamed Stream 8 is in the vicinity of the intersection of East Lake Sammamish Parkway SE and SE 8th Street, north of Pine Lake Creek (see Figure 3-2d). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE to the east. The stream enters the project area from the southeast, flowing into Wetland 24A on the east side of the Interim Use Trail. The stream diverges into two separate channels. The southern channel (South Fork) flows northwest in a pipe under the trail to Wetland 24B then continues through residential properties to Lake Sammamish. The northern channel (North Fork) flows parallel to the trail through a pipe under a residential roadway and then into Wetland 24C. From there, the stream changes direction and flows into a pipe under the trail that continues to Lake Sammamish. Riparian vegetation in the project area is mostly wetland vegetation (described above for Wetlands 24A, 24B, and 24C) with mowed grass, Himalayan blackberry, English ivy, and reed canarygrass. Unnamed Stream 8 meets the criteria for presumed fish presence and is therefore

classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Stream 0155 Subbasin: Monohon Stream Classification: Type F Station: 401+75

Stream 0155 is located north of the intersection of East Lake Sammamish Parkway SE and SE 8th Street, south of Ebright Creek (see Figure 3-2e). This stream receives off-site flow from adjacent hillside properties and roadways to the east, including East Lake Sammamish Parkway SE, and from a large wetland across the parkway (labeled as East Lake Sammamish #64 under King County's wetland inventory). The stream enters the project area from the southeast, flowing into Wetland 25A on the east side of the Interim Use Trail. The water flows southwest through Wetland 25A to a catch basin with a trash rack and is piped northwest under the Interim Use Trail and adjacent residential properties before it enters Lake Sammamish. Riparian vegetation in the project area is mostly wetland vegetation (described above for Wetland 25A) with Himalayan blackberry, hedge false bindweed, reed canarygrass, and lawn with landscaped trees and shrubs. A driveway disrupts connectivity between Wetland 25A and Wetland 25B to the north. The presence of fall-run Chinook, winter-run steelhead, coho, and sockeye is modeled in the stream (WDFW 2016a). Stream 0155 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Ebright Creek Subbasin: Thompson Stream Classification: Type F Stations: 411+85, 411+90

Ebright Creek is located in the Thompson subbasin (see Figure 3-2e). WDFW (2016a) indicates that kokanee, coho, winter-run steelhead, and sockeye have been documented in the stream, and the presence of fall-run Chinook is modeled. Late-run kokanee are known to spawn in Ebright Creek, and coho salmon (spawning and rearing) and sockeye salmon (spawning) may be present in the lower reaches downstream of a man-made fish barrier (Berge and Higgins 2003). Ebright Creek also supports cutthroat trout (spawning and rearing) and rainbow trout (spawning and rearing) throughout its 2.65mile length (King County 1990). In the lower reaches, the stream has characteristics that favor spawning and rearing by coho salmon and spawning by sockeye and kokanee salmon (King County 1990). Farther upstream, the gradient sometimes approaches 5 percent through the ravines, forming tiered or staircase features that result in patch gravel and small-volume pools that are favored by trout (King County 1990). During stream surveys in 1999, six adult kokanee salmon (25 to 35 centimeters in length) were observed spawning within 10 feet of the former railbed and two redds were observed. An adult coho salmon carcass was also found on the stream bank, 5 feet to the east of the former railbed. On December 9, 1999, two adult coho salmon spawners were observed in the stream adjacent to the former railbed. The King County Volunteer Salmon Watcher Program reported over 100 kokanee between RM 0.2 and RM 0.9 during November and December 2001 (Vanderhoof 2002). In addition, one coho salmon was reported at RM 0.2.

The Lake Sammamish Kokanee Work Group (2014) identifies Ebright Creek as a primary spawning stream for kokanee, one of four streams in the Lake Sammamish basin that has supported the vast majority of spawning by late-run kokanee in recent years. Replacement or improvement of the culverts under the

Interim Use Trail is included on a list of suggested stream restoration and enhancement projects needed to help improve the health of native kokanee populations (Lake Sammamish Kokanee Work Group 2014).

Channel morphology downstream of the Interim Use Trail (i.e., the former railbed) is a riffle/pool combination. Pool quality is excellent, with two pools directly downstream of the project corridor. The stream banks immediately below the corridor are stable, having been stabilized with the placement of three pieces of LWD (10 to 50 feet long, 18 to 24 inches in diameter) and large boulders. More LWD has been added in the stream channel downstream of the Interim Use Trail.

At the Interim Use Trail, the stream flows through two 36-inch concrete culverts, both of which are in good condition and unblocked. The stream undergoes 25- and 100-year flood flows of 39 and 45 cfs, respectively. However, the culverts beneath the Interim Use Trail may block fish migration at high flows (White 1999). The WDFW Fish Passage and Diversion Screening Inventory Database identifies these culverts as a partial barrier to fish passage.

Substrate composition consists of 20 percent cobble, 50 percent gravel, and 30 percent sand and silt, forming habitat suitable for adult salmonid spawning. However, a substantial concentration of sediment and fines (greater than 80 percent composition) was observed at the tail end of the pool immediately downstream of the culverts crossing the Interim Use Trail. Although the stream does not appear to be downcutting its bed in the area, the plunge pool below the culverts is retaining sediment, sand, and fines.

Upstream of the Interim Use Trail, 10 feet to the east, the stream is partially blocked with vegetation. The vegetation blockage may be reducing stream flows through the culverts, contributing to sediment deposition in the plunge pool.

Riparian vegetation consists of giant horsetail, red alder, Himalayan blackberry, bigleaf maple, reed canarygrass, and Scotch broom. Ebright Creek is associated with Wetland 25F.

Ecology (1994) identified an erosion problem in Ebright Creek upstream from East Lake Sammamish Parkway to the impassable barrier at RM 0.45. Bed and bank erosion in the upper and middle reaches of the stream result in sedimentation of salmonid spawning and rearing habitat in lower reaches and of culverts under East Lake Sammamish Parkway (Ecology 1994). The WDFW Fish Passage and Diversion Screening Inventory Database identifies the culvert under East Lake Sammamish Parkway as a partial barrier to fish passage.

Ebright Creek is classified as a Type F stream with a required buffer width of 150 feet (SMC 21A.50.330).

Zaccuse Creek Subbasin: Monohon Stream Classification: Type F Station: 424+60

Zaccuse Creek lies in the Monohon subbasin (see Figure 3-2f). WDFW (2016a) indicates that coho salmon have been documented in the stream, and the presence of winter steelhead, sockeye, and fall Chinook is modeled. The stream likely supports cutthroat trout (spawning and rearing), and it may support late-run kokanee salmon and coho salmon spawning near the stream mouth. The stream is 1.18 miles in length, but only 0.05 mile is accessible to anadromous or adfluvial fish (King County 1990). There is a culvert barrier at East Lake Sammamish Parkway (King County 1990). At one time, this stream may have supported coho, kokanee, and/or sockeye salmon in the lower reaches prior to the creation of fish barrier(s) near the mouth. During the large run of Lake Sammamish kokanee in 2012-13, up to 60

mature adults were observed in Zaccuse Creek, although it is unclear whether most of the fish spawned in the creek or moved to another tributary to spawn (Lake Sammamish Kokanee Work Group 2014). During stream surveys in 1999, no fish were observed within 100 feet of the Interim Use Trail.

The Lake Sammamish Kokanee Work Group (2014) identifies Zaccuse Creek as a small secondary stream that has the potential for kokanee spawning. Replacement or improvement of the culverts under East Lake Sammamish Shore Lane, the Interim Use Trail, and East Lake Sammamish Parkway is included on a list of suggested stream restoration and enhancement projects needed to improve the health of native kokanee populations (Lake Sammamish Kokanee Work Group 2014).

Downstream of the Interim Use Trail, channel morphology is a riffle/glide combination. Substrate composition in this downstream reach consists of 40 percent cobble and 60 percent sand and gravel, which is suitable for salmonid spawning. The stream banks appear to be stable, with no evidence of deep erosional sides or soil sloughing.

No LWD is present in the downstream reach of Zaccuse Creek. A broken clay pipe lies across the channel approximately 50 feet downstream of the Interim Use Trail. The stream passes through a bridge under a private driveway before entering a culvert that runs underneath a residence. Eventually, the stream emerges and flows into Lake Sammamish.

The stream flows underneath the Interim Use Trail in a 36-inch concrete culvert, which is in good condition. There is no sediment in the culvert or culvert outlet blockage. The stream experiences 25- and 100-year flood flows of 28 and 43 cfs, respectively. Flow depth in the culvert averages 2.5 inches. The culvert beneath the Interim Use Trail may act as a partial fish barrier (White 1999). The WDFW Fish Passage and Diversion Screening Inventory Database identifies this culvert as a partial barrier to fish passage. At the culvert outlet, the stream has created a plunge pool. From the culvert, the stream drops 12 to 18 inches into a 3-foot by 10-foot plunge pool. This is the only pool within 100 feet of the corridor.

Riparian vegetation consists of giant horsetail, Himalayan blackberry, reed canarygrass, and red alder, which are typical of a disturbed riparian zone. Bigleaf maple and Scotch broom are also present. Upstream from the Interim Use Trail, the stream channel is choked with Himalayan blackberry and forms a part of Wetland 26A. East Lake Sammamish Parkway lies 75 feet east of the Interim Use Trail and slightly uphill. Beyond East Lake Sammamish Parkway is another large wetland. In this wetland, the stream channel is braided and choked with vegetation. The culvert beneath East Lake Sammamish Parkway is partially blocked with sediment and vegetation. The WDFW Fish Passage and Diversion Screening Inventory Database identifies the culvert under East Lake Sammamish Parkway as a partial barrier to fish passage.

Zaccuse Creek is classified as a Type F stream with a required buffer width of 150 feet (SMC 21A.50.330).

Unnamed Stream 9 Subbasin: Monohon Stream Classification: Type F / Type Np Station: 432+80

Unnamed Stream 9 is located in the vicinity of the intersection between East Lake Sammamish Parkway SE and Louis Thompson Road NE, south of George Davis Creek (see Figure 3-2f). This stream receives offsite flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE and Louis Thompson Road NE to the east. The stream enters the project area from the east and flows over a quarry spall-lined slope (no defined channel) to the Interim Use Trail, where it is piped under the trail into Wetland 26D west of the trail. Unnamed Stream 9 flows out of the pipe under the trail at the northeast corner of the wetland, then flows south along the eastern boundary before turning west in the southeast corner and continuing to Lake Sammamish. West of the trail, this stream is part of a wetland/stream restoration site with LWD, recent plantings, and irrigation. The riparian buffer to the northwest has also been planted between the wetland and nearby house. Riparian vegetation east of the trail is primarily Himalayan blackberry. Unnamed Stream 9 meets the criteria for presumed fish presence downgradient of the trail and is therefore classified as a Type F stream. Upgradient of the trail the stream lacks a defined channel on the steep quarry spall slope and is classified as Type Np. The required buffer width for Type F streams in the city of Sammamish is 150 feet, and the buffer for Type Np streams is 75 feet (SMC 21A.50.330).

George Davis Creek Subbasin: Inglewood Stream Classification: Type F Stations: 441+35, 441+40

George Davis Creek lies in the Inglewood subbasin (see Figure 3-2f). This stream is also known locally as Inglewood Creek or Eden Creek (King County 1994). WDFW (2016a) indicates coho and winter steelhead have been documented in the stream, and the presence of sockeye and fall Chinook is modeled. The stream is believed to support late-run kokanee salmon, coho salmon (rearing), cutthroat trout (spawning and rearing), and rainbow trout (spawning and rearing) (Williams et al. 1975; King County 1990). The Lake Sammamish Kokanee Work Group (2014) identifies George Davis Creek as a small secondary stream that has the potential for kokanee spawning. Adult kokanee have occasionally been observed in George Davis Creek since 2009, following a project that restored approximately 100 feet at the mouth of Lake Sammamish. Approximately 15 kokanee were observed spawning in the stream (Lake Sammamish Kokanee Work Group 2014).

The stream is 3.46 miles in length, but only about 100 feet is accessible to anadromous or adfluvial fish (Lake Sammamish Kokanee Work Group 2014). At one time, this stream likely supported coho, kokanee, and/or sockeye salmon in the lower reaches prior to the creation of fish barriers near its mouth. Sedimentation and the stream culvert under an adjacent residence severely limit the amount of usable salmonid habitat in the portion downstream of the Interim Use Trail.

A section of the stream downstream of the Interim Use Trail has been piped under a private driveway and a house. This culvert also acts as a partial barrier to fish passage (Ecology 1994). Underneath the Interim Use Trail, there are two concrete culverts, 24 and 36 inches in diameter, which are 50 percent blocked by sediment. The WDFW Fish Passage and Diversion Screening Inventory Database identifies these culverts as a potential but unevaluated barrier to fish passage. Pool quality and quantity are poor. Because of restricted access, no survey was performed in the reach downstream of King County right-of-way. However, lakeshore spawning by kokanee salmon may occur near the outlet of the stream (Ecology 1994).

Upstream of the Interim Use Trail, a culvert under East Lake Sammamish Parkway also creates a barrier to salmonid migration, as does a second culvert at RM 0.81 (King County 1990). The WDFW Fish Passage and Diversion Screening Inventory Database identifies the culvert under East Lake Sammamish Parkway as a total barrier to fish passage. Upstream of the Parkway, between RMs 0.2 and 0.8, the stream channel contains sufficient amounts of LWD and habitat conditions that are generally favorable for salmonids (Ecology 1994). In general, the upper tributary streams in the Inglewood Basin all have some rearing habitat available for resident cutthroat trout and some limited spawning areas (Ecology 1994).

The stream reach upstream of East Lake Sammamish Parkway (beyond the impassable barriers) has been identified as a problem area for erosion/sedimentation and water quality (Ecology 1994). Salmonid

habitat on the Sammamish Plateau has been degraded by past agricultural practices, such as ditching, clearing, and poor pasture management; only short reaches have not been straightened or dredged to drain fields more rapidly or to eliminate wetlands. The stream above RM 2.0 has been grossly modified through channelization and dredging (King County 1990).

The 25- and 100-year flood flows for this stream are 35 and 42 cfs, respectively. Near the Interim Use Trail, the channel has been deeply eroded (greater than 10 feet), exposing tree roots on the bank. Riparian vegetation is dominated by bigleaf maple and Himalayan blackberry. Other species observed include Douglas fir, Portuguese laurel, English laurel, hedge false bindweed, English ivy, beaked hazelnut, thimbleberry, and western swordfern. The stream has downcut its channel and exposed a gravel/cobble substrate in the streambed near the Interim Use Trail.

George Davis Creek is classified as a Type F stream with a required buffer width of 150 feet (SMC 21A.50.330).

Unnamed Stream 10 Subbasin: Panhandle Stream Classification: Type F Station: 449+95

Unnamed Stream 10 is located south of the intersection between East Lake Sammamish Parkway SE and NE Inglewood Hill Road, north of George Davis Creek (see Figures 3-2f and 3-2g). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE to the east. The stream enters the project area from the east and flows into Wetland 28A, where it turns north and enters a pipe under the Interim Use Trail. West of the trail, the stream flows through a quarry spall-lined channel with some gravel, then enters a plastic pipe under a walkway associated with the adjacent residential property before its outlet to Lake Sammamish. The riparian area east of the trail is dominated by wetland vegetation associated with Wetland 28A, and improved areas for parking used by adjacent residential properties. The riparian area west of the trail consists of improved areas associated with the adjacent residential property (i.e., structures, sport court, and landscaped yard). Unnamed Stream 10 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Unnamed Stream 11 Subbasin: Panhandle Stream Classification: Type F Station: 452+95

Unnamed Stream 11 is located south of the intersection between East Lake Sammamish Parkway SE and NE Inglewood Hill Road (see Figure 3-2g). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE to the east. The stream enters the project area from the east and continues west. It is associated with Wetlands 28D and 29C. Much of the riparian area is developed as part of the adjacent residential properties with little native vegetation. Unnamed Stream 11 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Unnamed Stream 12 Subbasin: Panhandle Stream Classification: NA⁵ Station: 454+55

Unnamed Stream 12 is located south of the intersection between East Lake Sammamish Parkway SE and NE Inglewood Hill Road (see Figure 3-2g). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE to the east, although it is piped entirely through the project area. East of the trail, the stream is an enclosed pipe under an improved area used for parking by adjacent residential properties. West of the trail, the stream flows in a half-pipe down to Lake Sammamish through improved residential areas. Unnamed Stream 12 is completely piped through the project area and therefore does not have a stream classification or required buffer in the city of Sammamish (SMC 21A.50.330).

Unnamed Stream 13 Subbasin: Panhandle Stream Classification: Type F Station: 455+80

Unnamed Stream 13 is located south of the intersection between East Lake Sammamish Parkway SE and NE Inglewood Hill Road, south of Stream 0143L (see Figure 3-2g). This stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE to the east. The stream enters the project area from the east and continues west. It is associated with Wetland 28C. Much of the riparian area is developed as part of the adjacent residential properties and little native vegetation is present. Unnamed Stream 13 meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

Stream 0143L (South Fork, North Fork) Subbasin: Panhandle Stream Classification: Type F Stations: 460+25, 464+25

Stream 0143L is located south of the intersection of East Lake Sammamish Parkway SE and NE Inglewood Hill Road, near the northern terminus of the project area (see Figure 3-2g). WDFW (2016a) does not identify this as a fish-bearing stream. The Lake Sammamish Kokanee Work Group (2014) identifies Stream 0143L as likely to have limited potential for kokanee spawning. The stream receives off-site flow from adjacent hillside properties and roadways, including East Lake Sammamish Parkway SE and NE Inglewood Hill Road to the east. The stream enters the project area from the east and hits a dissipating rock structure that splits the stream into two channels, the South Fork and North Fork. The South Fork flows south along the Interim Use Trail for a short distance before crossing under the trail in a pipe to the west side, where it continues in an incised channel to Lake Sammamish. Riparian habitat along the South Fork is dominated by upland forest with a disturbed understory and developed residential areas farther south. The North Fork flows north adjacent to the trail and along Wetland 30B before turning west to a pipe under the Interim Use Trail. The stream continues in an incised channel

⁵ Stream is piped entirely in project area.

west of the trail through an area used as a community beach. Riparian habitat along the North Fork consists mostly of native forest with wetland vegetation (Wetland 30B) on the east side of the trail and upland forest with a disturbed understory west of the trail. Stream 0143L meets the criteria for presumed fish presence and is therefore classified as a Type F stream. The required buffer width for Type F streams in the city of Sammamish is 150 feet (SMC 21A.50.330).

3.4 Lake Sammamish

Lake Sammamish, with a surface area of approximately 4,900 acres, is one of the largest lakes in the Puget Sound Basin (King County 1990). The lake receives flow primarily from Issaquah Creek and discharges north through the Sammamish River to Lake Washington, Lake Union, and Puget Sound. Most of the watershed is located within the King County urban growth area boundary and is (or is proposed to be) developed with high-density residential and commercial land uses (King County 1994; KCCFM 2000). Within the project area residential development has been concentrated between the East Lake Sammamish Parkway and the lakeshore.

Lake Sammamish serves as a rearing environment and migratory pathway for both resident and anadromous salmonids, with Chinook, coho, sockeye, and kokanee salmon; steelhead; and coastal cutthroat trout likely to be found in the lake and its tributaries (King County 1990; Pfeifer 1992). Other than one unconfirmed anecdotal account, there is no documentation of bull trout presence in the Lake Sammamish Watershed. Tributary thermal regimes are unsuitable for reproduction by this species, and there is no known local spawning population in low-elevation tributaries of either Lake Washington or Lake Sammamish (WDFW 1998). Lake Sammamish also contains a diverse population of resident nonsalmonid species, including largemouth bass (*Micropterus salmoides*), yellow perch (*Perca flavescens*), brown bullhead (*Ameiurus nebulosus*), and black crappie (*Pomoxis nigromaculatus*) (King County 1990).

Lake Sammamish is a shoreline of the state, regulated under the City of Sammamish SMP (effective August 31, 2011). The project area has a Shoreline Residential shoreline designation. According to SMP 25.06.020(9), Lake Sammamish has a 50-foot shoreline setback. Residential structures and associated landscaping cover the majority of the setback in the project area, with a small area of native forest and a disturbed understory near the northern terminus.

3.5 Fish and Wildlife Habitat Conservation Areas

Based on a review of existing information and site conditions, the following areas with which state or federally designated endangered, threatened, or sensitive species have a primary association are present in the project area:

- Pine Lake Creek, Ebright Creek, and George Davis Creek, where steelhead (listed as threatened under the Endangered Species Act [ESA]) have been documented
- A bald eagle breeding area (nest) near Pine Lake Creek, approximately 290 feet east of the trail, on the opposite side of East Lake Sammamish Parkway SE.

No other areas with which state or federally designated endangered, threatened, or sensitive species have a primary association are present in the project area. There are no state natural area preserves, natural resource conservation areas, or wildlife habitat corridors in the project area.

According to SMC 21A.50.325(1), if a fish and wildlife habitat conservation area is also classified as a stream, lake, pond, or a wetland, then the appropriate protection standards for the stream, lake, pond, or wetland shall apply and habitat management shall be addressed as part of the stream, lake, pond, or

wetland review. The protection standards for Pine Lake Creek, Ebright Creek, and George Davis Creek (which are designated as fish and wildlife habitat conservation areas based on the documented presence of steelhead) are specified in the pertinent discussions in Section 3.3, above. Habitat conservation areas that are lakes are governed by the requirements of the Sammamish SMP (SMC 21A.50.325(3)). See Sections 3.2, 3.3, and 3.4 for information on wetlands, streams, and Lake Sammamish.

3.6 Critical Aquifer Recharge Areas

City of Sammamish CARA maps identify Class 3 wellhead protection zones in the southern portion of the project area (see Figure 3-2a).

4. IMPACT ASSESSMENT

This section describes the extent and type of permanent and temporary impacts on critical areas and associated buffers that will occur as a result of the proposed project. Wetland buffers, stream buffers, and the shoreline setback often overlap in the project area. Where overlap occurs, impacts are calculated and presented in descending order of priority from wetland buffer, stream buffer, and lastly shoreline setback.

4.1 Wetlands

Permanent and temporary impacts on wetlands and buffers are unavoidable (Table 4-1; Appendix D). This section describes the extent and type of temporary and permanent impacts on wetland and wetland buffers that will occur as a result of constructing the proposed trail project. Only impacts on areas that are defined solely as wetland buffers are reported in this section.

	Ecology/	Wet	tland	Buffer		
Wetland	Sammamish Rating ^a	Perm. Impacts acres (SF)	Temp. Impacts acres (SF)	Perm. Impacts acres (SF)	Temp. Impacts acres (SF)	
15A	111	-	0.02 (679)	0.04 (1,807)	0.04 (1,828)	
15BC	IV	-	0.01 (216)	0.05 (2,101)	0.08 (3,667)	
15D	IV	-	0.03 (1,247)	0.03 (1,169)	0.07 (3,048)	
15E ^b	IV	0.05 (2,022)	-	-		
18C	111	-	-	0.03 (1,193)	0.04 (1,622)	
19A ^b	IV	0.01 (278)	-	-	-	
19B	III	-	0.01 (532)	0.07 (3,228)	0.10 (4,307)	
20A ^b		0.05 (2,087)	-	-	-	
21AC		-	0.01 (574)	0.10 (4,298)	0.09 (3,846)	
21B		-	<0.01 (52)	<0.01 (7)	0.02 (825)	
21D	IV	-	-	< 0.01 (99)	0.03 (1,440)	
22AB	III	-	0.03 (1,426)	0.14 (5,941)	0.11 (4,949)	
22CD	IV	-	0.01 (286)	0.06 (2,752)	0.07 (3,156)	
22E ^b	IV	<0.01 (191)	-	-	-	
23A	IV	-	0.01 (265)	0.01 (521)	0.03 (1,336)	
23B	III	<0.01 (65)	0.01 (626)	0.04 (1,594)	0.03 (1,204)	
23C		-	0.01 (383)	0.03 (1,299)	0.05 (2,223)	
24A	III	-	0.06 (2,583)	0.01 (593)	0.04 (1,937)	
24B		0.05 (2,301)	0.11 (4,840)	0.09 (4,096)	0.02 (1,027)	
24C	111	-	0.02 (979)	0.08 (3,496)	0.26 (11,372)	
25A	111	-	0.04 (1,617)	0.08 (3,306)	0.18 (7,709)	
25B	111	-	0.02 (679)	0.08 (3,293)	0.14 (5,892)	
25C	III	-	0.02 (790)	0.06 (2,411)	0.07 (3,096)	
25F	IV	-	<0.01 (166)	0.02 (1,061)	0.05 (2,361)	
26A	III	<0.01 (9)	0.09 (4,100)	0.14 (6,086)	0.35 (15,434)	

Table 4-1. Summary of Impacts on Wetlands and Buffers

Wetland	Ecology/ - Sammamish Ratingª	Wet	tland	Buffer		
		Perm. Impacts acres (SF)	Temp. Impacts acres (SF)	Perm. Impacts acres (SF)	Temp. Impacts acres (SF)	
26B	IV	-	<0.01 (99)	0.02 (744)	0.03 (1,444)	
26C	IV	0.01 (455)	0.01 (497)	0.03 (1,102)	0.05 (2,233)	
26D	III	-	<0.01 (186)	0.05 (2,379)	0.10 (4,488)	
28A	IV	0.01 (224)	0.01 (650)	0.05 (2,120)	0.07 (3,121)	
28B	IV	-	<0.01 (156)	0.03 (1,133)	0.02 (882)	
28C ^b	IV	0.02 (837)	-	-	-	
28D ^b	IV	<0.01 (201)	-	-	-	
28E	IV	-	0.01 (323)	0.04 (1,588)	0.04 (1,728)	
29B	IV	0.01 (295)	0.01 (477)	0.01 (571)	0.02 (753)	
29C		-	<0.01 (27)	0.01 (581)	0.04 (1,687)	
29D	IV	0.01 (464)	0.03 (1,105)	0.02 (877)	0.01 (507)	
30B		-	0.01 (218)	0.07 (3,093)	0.09 (3,995)	
	Total	0.22 (9,429)	0.59 (25,778)	1.48 (64,529)	2.37 (103,117)	

Table 4-1. Summary of Impacts on	Wetlands and Buffers
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^a Hruby (2004), as specified in SMC 21A.15.1415

^b Wetland impacted in entirety

Perm. = Permanent, Temp. = Temporary, SF = square feet. Note that the sums of individual acre values may not match total values due to rounding errors.

4.1.1 Permanent Wetland Impacts

Permanent impacts to wetlands occur when there is a permanent loss of wetland area, typically as a result of paving or grading. Thirteen wetlands will be permanently affected by the proposed project, totaling 0.22 acres (see Table 4-1 and Appendix D). Six of these wetlands will be affected in their entirety (Wetlands 15E, 19A, 20A, 22E, 28C, and 28D), all of which are 0.05 acre or less. The majority of impacts to wetland are to palustrine emergent wetlands that are near the Interim Use Trail and are currently maintained as part of current trail activities, or are maintained by adjacent property owners as yard. Four of these are Category III wetlands with the other nine being Category IV wetlands.

4.1.2 Temporary Wetland Impacts

Construction activities that will result in temporary wetland impacts include culvert replacements, associated stormwater drainage facilities, construction access, and installation of silt and construction fencing. A total of 29 wetlands will be temporarily affected during construction. The net impact area is 0.59 acre, with impacts ranging from less than 0.01 acre to 0.11 acre. Vegetation in these areas often consists of reed canarygrass, giant horsetail, Himalayan blackberry, disturbance-tolerant herbaceous species, native shrubs, or maintained yard. Temporarily disturbed wetlands will be restored by reseeding or replanting with appropriate native species when construction activities are completed.

4.1.3 Permanent Wetland Buffer Impacts

Permanent impacts occur when there is a permanent loss of wetland buffer area, typically as a result of paving or permanent clearing. Construction activities that will result in permanent wetland buffer impacts include trail widening; driveway reconfigurations; stair replacements; culvert replacements; and stormwater drainage features. The project will permanently affect portions of 31 wetland buffers (see

Table 4-1). Approximately 1.48 acres of wetland buffer will be eliminated as a result of trail widening and realignment. The buffers of Wetlands 22AB and 26A have the largest affected area (0.14 acre each), which accounts for approximately 19 percent of the total permanent buffer impacts. The remaining affected wetland buffer areas are 0.10 acre or less. The majority of the wetland buffers to be affected by the project are narrow linear swathes immediately adjacent to the Interim Use Trail vegetated with herbaceous species that are currently disturbed by routine trail maintenance activities, landscaped plants associated with adjacent residences, Himalayan blackberry, and native trees and shrubs. Minimal effects on wetland buffer functions are anticipated.

4.1.4 Temporary Wetland Buffer Impacts

The buffer of 31 wetlands will be temporarily affected during construction. In total, construction will temporarily affect 2.37 acres of wetland buffer (see Table 4-1). Temporary impacts on wetland buffers consist of minor clearing and grading outside of the trail footprint to enable project construction. These construction work areas along the edge of the proposed trail have been conservatively estimated for this project. Once construction is complete, regrowth is expected relatively quickly from the seeds, roots, tubers, stems, and other propagules in the soil under the temporary impact areas. The majority of the wetland buffers to be cleared and graded are primarily vegetated with herbaceous species that are currently disturbed by routine trail maintenance activities, landscaped plants associated with adjacent residences, Himalayan blackberry, and native trees and shrubs. Temporarily disturbed buffers will be restored by reseeding or replanting with appropriate native species when construction activities are completed.

4.2 Streams

Although the project was designed with specific features to avoid and minimize impacts on critical areas, some unavoidable impacts on streams and stream buffers will result from the trail widening, realignment, and drainage improvements (Table 4-2; Appendix D). Stream buffers, wetland buffers, and the shoreline setback overlap in the project area at many locations. Where overlap occurs, impacts are calculated in descending order of priority from wetland buffer, stream buffer, and lastly shoreline setback. Only impacts on areas that are defined solely as stream buffers are reported in this section.

Stream channel and stream buffer impacts can be classified as either permanent or temporary:

- Permanent impacts occur when fill is placed in a stream or a stream is piped, or when a designated stream buffer area is permanently cleared, resulting in a net loss of open stream channel or buffer.
- Stream impacts are considered temporary when a stream is temporarily diverted or relocated to accommodate construction, a stream channel is regraded, or when a designated stream buffer area is temporarily cleared to allow for project construction activities.

Stream channel loss results in permanent loss of instream habitat. Instream habitat directly supports fish and other aquatic life by providing specific physical and biological elements for the rearing, feeding, spawning, and migration of aquatic species.

Stream buffers are also important, contributing both directly and indirectly to the health of streams and the fish that inhabit those streams. Properly functioning stream buffers provide shade and a source of LWD, contribute organic debris to the stream, stabilize stream banks, reduce fine sediment input into streams, filter nutrients and pollutants, and reduce and detain flood waters (Beschta et al. 1987; McDade et al. 1990; Sedell and Beschta 1991). The effectiveness of a stream buffer is dependent on three primary factors: the type of vegetation within the buffer, the density of the vegetation, and the

width of the buffer. Mature forest provides the highest level of riparian functions; mature conifer forest provides greater riparian function than mature hardwood forest, particularly LWD recruitment (McDade et al. 1990). Riparian communities dominated by immature forest or shrubs can support some riparian functions (stream bank stabilization, nutrient input, filtration of fine sediment), although these functions are provided at a significantly lower level than in mature forested systems, and some functions (e.g., LWD recruitment) are almost completely lacking. Likewise, riparian systems consisting of herbaceous vegetation (e.g., grasses) provide minimal riparian functions, particularly in regards to supporting habitat needs of salmonids (cold, clear water; habitat complexity; and instream cover).

4.2.1 Stream Channel Impacts

Stream channels are permanently affected at locations where a stream passes under the trail in a culvert that requires lengthening, or where a stream falls within the footprint of the proposed trail. Based on current design, 24 linear feet (114 square feet) of three streams (Unnamed Streams 7, 8 [South Fork], and 13, all classified as Type F) will be permanently lost due to culvert extensions (Table 4-2).

The replacement of culverts on six Type F streams (Pine Lake Creek, Stream 0155, Ebright Creek, Zaccuse Creek, George Davis Creek, and Stream 0143L [North Fork]) at six trail crossings will result in a gain of 84 linear feet (609 square feet) of stream channel in those streams. The other nine streams in the project area will have no gain or loss of channel (see Table 4-2). Additionally, two more culvert crossings will be replaced and designed to fish passage standards, adding another 12 linear feet (approximately 115 square feet) of channel. This includes the downstream road crossing of Pine Lake Creek and the downstream road crossing of Zaccuse Creek. The replacement of existing culverts with shorter and wider culverts will result in a net gain of approximately 72 linear feet (approximately 610 square feet) of stream channel. Details on specific culvert replacements are provided below. Detailed depictions of proposed culvert replacements will be included in the engineering design drawings for this project.

Temporary impacts on channels will occur on some streams where regrading is needed for culvert replacements. Regrading of the channel (upstream and downstream) at culvert replacement areas will improve stream profile and slope. Temporary stream bypasses will be used during construction of the new culverts.

Pine Lake Creek (at the trail) (Sta. 379+14)

The existing twin 36-inch concrete culverts are each 32 feet long. The culverts will be replaced by a precast reinforced split box culvert. Pine Lake Creek has an average measured bankfull width of 10.2 feet, and the stream has slopes of approximately 2.5 percent downstream of the culvert. The new culvert will be 14 feet wide, 7 feet high, and 19 feet long. The reduced length of the new culvert will increase the length of open channel stream by 13 feet. The invert of the culvert will be countersunk, and the streambed slope will be approximately 1.5 percent through the culvert. Replacing these two culverts near the mouth of Lake Sammamish will enhance access to approximately 30 feet of upstream habitat between the Interim Use Trail and East Lake Sammamish Parkway, with the potential for access to an additional 10,330 feet of habitat in Pine Lake Creek upstream of East Lake Sammamish Parkway.

Pine Lake Creek (downstream of trail)

This segment of the stream is on private property and is not within the trail corridor. The existing culvert is being replaced in lieu of one on Stream 0163 S, which is located in the South Sammamish Segment A project. The existing culvert is a single 36-inch-diameter concrete culvert that is 41 feet long with a slope of 0.76 percent. The culvert will be replaced by a 32-foot-long box culvert with a 14-foot span and a height of 7 feet. The reduced culvert length of the new culvert will increase the length of open-channel stream by 9 feet. The invert of the culvert will be countersunk, and the streambed slope will transition

	City of Sammamish Rating ^a	Stream Channel Perm. Loss		Stream Channel Perm. Gain		Stream Channel Temp. Impact		Stream Buffer	
Stream								Perm. Impact	Temp. Impact
		Linear Feet	Square Feet	Linear Feet	Square Feet	Linear Feet	Square Feet	acres (SF)	acres (SF)
Unnamed 4	F	-	-	-	-	-	-	0.01 (233)	0.01 (640)
Unnamed 5	F	-	-	-	-	-	-	-	-
Unnamed 6	F	-	-	-	-	-	-	-	-
Unnamed 7	F	10	50	-	-	-	-	0.01 (279)	<0.01 (101)
Pine Lake Creek	F	-	-	13 ^b	130 ^b	-	-	-	-
Unnamed 8 (SF)	F	8	40	-	-	-	-	-	-
Unnamed 8 (NF)	F	-	-	-	-	-	-	-	-
0155	F	-	-	19	95	-	-	-	<0.01 (98)
Ebright Creek	F	-	-	18	160	13	116	0.02 (854)	0.06 (2,752)
Zaccuse Creek	F	-	-	15 ^c	90 ^c	80	480	-	-
Unnamed 9	Np	-	-	-	-	-	-	0.04 (1,565)	0.07 (2,901)
George Davis Creek	F	-	-	5	50	10	100	0.04 (1,739)	0.10 (4,258)
Unnamed 10	F	-	-	-	-	-	-	0.01 (513)	0.01 (313)
Unnamed 11	F	-	-	-	-	-	-	<0.01 (85)	0.01 (601)
Unnamed 12	NA ^d	-	-	-	-	-	-	-	-
Unnamed 13	F	6	24	-	-	-	-	0.04 (1,605)	0.01 (425)
0143L (SF)	F	-	-	-	-	-	-	0.01 (394)	0.01 (648)
0143L (NF)	F	-	-	14	84	-	-	0.03 (1,450)	0.06 (2,639)
	Total	24	114	84	609	103	696	0.20 (8,817)	0.35 (15,376)

Table 4-2. Summary of Impacts on Stream Channels and Buffers

a SMC 21A.15.1240

b An additional 15 linear feet (approximately 130 square feet) of stream channel will be gained through culvert replacements downstream of the project area.

c Stream channel gains on Zaccuse Creek will be offset slightly by the loss of approximately 2.5 linear feet (15 square feet) of stream channel due to a culvert replacement downstream of the project area.

d Stream is piped entirely in project area

Perm. = Permanent, Temp. = Temporary, SF = square feet, NA = not applicable

from 2.91 percent at the culvert inlet to 0.22 percent through the culvert until the slope matches existing grade approximately 20 feet downstream of the culvert outlet.

There are two 6-foot-diameter redwood trees flanking either side of the existing culvert on the downstream end. These two trees will be preserved at the request of the homeowners. As a result, the new culvert will shift to the east of its existing location approximately 6 feet on the upstream end. The downstream side will open up approximately 15 feet of new channel; however, because of the proximity of the trees, the channel will not be full width. Replacing this culvert will improve connectivity to approximately 150 feet of habitat between East Lake Sammamish Shore Lane and the Interim Use Trail.

Stream 0155 (Sta. 401+75)

The existing culvert that conveys Stream 0155 under the trail is a 16-inch corrugated plastic pipe. On the east side of the trail, water flows into the top of a type 2 catch basin with a birdcage lid. On the west side of the trail, the pipe connects into a type 2 catch basin with a solid lid. From there, the stream is conveyed to the lake through a 20-inch pipe. The proposed fish passage box culvert will be 19 feet long. The two catch basin structures on either side of the trail will be removed. The catch basin rim on the east side provides a constant overflow elevation for the adjacent wetland. This function will be replaced by adding a rock weir around the entrance to the new culvert. Approximately 9 feet of channel will be opened on the east side. On the west side, the channel will be opened approximately 10 feet to the adjacent driveway. A short retaining wall will be installed along the edge of the driveway to protect the embankment and allow for the short section of open channel between the trail and the driveway.

The bankfull width of Stream 0155 is approximately 5 feet and the proposed box culvert will be 8 feet wide by 8 feet high. The streambed slope through the culvert is approximately 2.8 percent, matching the stream channel elevation on the east end and the assumed pipe invert on the west end. Replacement of the existing culvert will improve connectivity to approximately 130 feet of upstream habitat between the Interim Use Trail and East Lake Sammamish Parkway, with the potential for access to an additional 2,550 feet of habitat upstream of East Lake Sammamish Parkway.

Ebright Creek (Sta. 411+90)

Ebright Creek currently crosses under the trail in twin 36-inch concrete culverts, one 34 feet long and the other 37 feet long. Ebright Creek has an average measured bankfull width of 8.9 feet with an average slope downstream of the trail of 2.7 percent. The new box culvert will have a 14-foot span, a height of 7 feet, and a length of 19 feet, thereby increasing the length of open channel by 18 feet. Additionally, approximately 13 feet of stream will be regraded at the culvert outfall. The short regrade will improve the stream profile by allowing the culvert slope to remain similar to existing conditions, and removing the potential of a perched culvert end. The streambed slope will be 1.8 percent through the culvert. Replacing the twin culverts under the trail will improve connectivity to approximately 60 feet of upstream habitat between the Interim Use Trail and East Lake Sammamish Parkway, with the potential for access to an additional 11,200 feet of habitat upstream of East Lake Sammamish Parkway.

Zaccuse Creek (Sta. 424+60)

The existing culvert that conveys Zaccuse Creek under the trail is a 34-foot-long, 36-inch-diameter concrete pipe. Consistent with specifications proposed by R2 Resource Consultants, Inc. (2012), the new box culvert will have a 10-foot span, a height of 8 feet, and a length of 19 feet, thereby increasing the length of open channel by 15 feet. Additionally, approximately 45 feet of open channel will be regraded from the East Lake Sammamish Parkway culvert outlet to the inlet of the trail box culvert, and approximately 35 feet of open channel will be regraded from the East Lake Sammamish Shore Lane box culvert. The regraded stream will have an average

slope of approximately 3.4 percent. Replacement of the existing culvert will improve connectivity to approximately 40 feet of upstream habitat between the Interim Use Trail and East Lake Sammamish Parkway, with the potential for access to an additional 3,320 feet of habitat upstream of East Lake Sammamish Parkway.

Zaccuse Creek (downstream of trail at East Lake Sammamish Shore Lane)

This segment of the stream is on private property at East Lake Sammamish Shore Lane and is not within the trail corridor. The existing culvert is being replaced in lieu of one on Stream 0163 N, which is located in the South Sammamish Segment A project. The existing culvert is a small bottomless concrete box that is approximately 2 feet wide by 3 feet tall by 9.5 feet long.

The culvert will be replaced by a 12-foot-long box culvert with a 10-foot span and a height of 5 feet. The extended length of the new culvert will slightly decrease the length of open channel at this crossing, but will allow the road to continue to accommodate vehicular access to private properties. The invert of the culvert will be countersunk, and the streambed slope will continue at the regraded slope of 3.4 percent. Replacing this culvert will improve connectivity to approximately 50 feet of habitat between East Lake Sammamish Shore Lane and the Interim Use Trail.

George Davis Creek (Sta. 441+40)

George Davis Creek currently crosses under the trail in a 36-inch concrete culvert that is 24 feet long, and an 18-inch concrete culvert that is 18 feet long. After the first 100 feet of open channel, the stream enters an enclosed system that navigates steep slopes beneath two private properties and East Lake Sammamish Shore Lane for approximately 180 feet before daylighting west of the trail.

The stream has an average measured bankfull width of 10 feet, with moderate slopes upstream of East Lake Sammamish Parkway averaging 3.5 percent, and steeper slopes downstream of East Lake Sammamish Shore Lane estimated up to 12 percent, where the stream is located in an enclosed pipe. The proposed design will install a 19-foot-long, 14-foot-span, 7-foot-rise concrete culvert. The culvert bed will be countersunk, and the streambed slope will be 1.2 percent through the culvert. The reduced culvert length will increase the length of open channel stream by 5 feet. Additionally, approximately 10 feet of stream will be regraded at both the culvert inlet and outfall. The regrade will provide a consistent channel section through the culvert crossing beneath the trail. Replacing the twin culverts under the trail will improve connectivity to approximately 40 feet of upstream habitat between the Interim Use Trail and East Lake Sammamish Parkway, with the potential for access to an additional 17,300 feet of habitat upstream of East Lake Sammamish Parkway.

Stream 0143L (Sta. 464+28)

The existing culvert that conveys Stream 0143L under the trail is a 34-foot-long, 36-inch-diameter concrete pipe. On the east side of the trail, water flows north in an open channel for approximately 320 feet at an average slope of 3 percent, before turning west and entering the existing concrete culvert. The existing culvert slope is approximately 6.9 percent, and the open channel downstream of the culvert averages 10 percent for approximately 50 feet before entering the lake.

The bankfull width of Stream 0143L is approximately 6 feet and the proposed box culvert will be 10 feet wide by 7 feet tall. The culvert bed will be countersunk, and the streambed slope will be approximately 5.9 percent.

The proposed fish passage box culvert will be 19 feet long. Approximately 9 feet of channel will be opened on the east side and approximately 5 feet of channel will be opened on the west side.

Replacement of the existing culvert will improve connectivity to approximately 360 feet of upstream habitat between the Interim Use Trail and East Lake Sammamish Parkway, with the potential for access to an additional 1,750 feet of habitat upstream of East Lake Sammamish Parkway.

4.2.2 Permanent Stream Buffer Impacts

In addition to effects on stream channels, the trail improvements will result in a permanent loss of stream buffers. Similar to permanent impacts on wetland buffers, permanent impacts on stream buffers occur when there is a permanent loss of stream buffer area, typically as a result of paving or permanent clearing. Construction activities that will result in permanent stream buffer impacts include trail widening, driveway reconfigurations, stair replacement, culvert replacements, and stormwater drainage features.

The project will permanently affect portions of 10 stream buffers (see Table 4-2). Approximately 0.20 acre of stream buffer will be eliminated as a result of trail widening and realignment. Impacts on buffers of each individual stream will be 0.04 acre or less. The majority of the stream buffers to be affected by the project are narrow linear swathes immediately adjacent to the Interim Use Trail vegetated with herbaceous species that are currently disturbed by routine trail maintenance activities, landscaped plants associated with adjacent residences, Himalayan blackberry, and native trees and shrubs. Minimal effects on stream buffer functions are anticipated.

4.2.3 Temporary Stream Buffer Impacts

The buffers of 11 streams will be temporarily affected during construction. In total, construction will temporarily affect 0.35 acre of stream buffer (see Table 4-2). Temporary impacts on stream buffers consist of minor clearing and grading outside of the trail footprint and around culvert replacement sites to enable project construction. These construction work areas have been conservatively estimated for this project. Once construction is complete, regrowth is expected relatively quickly from the seeds, roots, tubers, stems, and other propagules in the soil under the temporary impact areas. The majority of the stream buffers to be cleared and graded are primarily vegetated with herbaceous species that are currently disturbed by routine trail maintenance activities, landscaped plants associated with adjacent residences, Himalayan blackberry, and native trees and shrubs. Temporarily disturbed buffers will be restored by reseeding or replanting with appropriate native species when construction activities are completed.

4.3 Lake Sammamish

Lake Sammamish is outside the project area and will not be permanently or temporarily affected by construction of the proposed trail. However, some permanent and temporary impacts on the outermost portion of the 50-foot shoreline setback are unavoidable (see Appendix D). Wetland buffers, stream buffers, and the shoreline setback often overlap in the project area. Where overlap occurs, impacts are prioritized by wetland buffer, stream buffer, and then shoreline setback. Only impacts on areas that are defined solely as shoreline setback are reported in this section.

4.3.1 Shoreline Setback Impacts

The proposed trail crosses the shoreline setback in a few locations, permanently clearing 0.09 acre (4,115 square feet). An additional 0.17 acre (7,372 square feet) will be temporarily cleared or graded outside of the trail footprint for construction. Temporarily disturbed shoreline setback areas will be

restored by reseeding or replanting with appropriate native species when construction activities are completed.

4.4 Fish and Wildlife Conservation Areas

In accordance with the SMP as described in Section 3.5, impacts to fish and wildlife conservation areas that fall within wetlands, streams, or lakes are described in Sections 4.1, 4.2, and 4.3 above. The only other fish and wildlife habitat conservation area in the project area is the bald eagle breeding area approximately 290 feet east of the trail near Pine Lake Creek.

The bald eagle is a state-listed sensitive species. Management guidelines developed by USFWS (2007) are intended to help minimize impacts to bald eagles, including impacts that constitute disturbance. Recommended measures for minimizing the risk of disturbance include (1) keeping a distance between the activity and the nest (disturbance buffers), (2) maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoiding certain activities within 660 feet of bald eagle nests during the breeding season (typically January 1 through August 15 in Washington State).

King County does not expect trail construction activities within 660 feet of the bald eagle nest to result in substantial disturbance to bald eagles based on current surrounding land uses and activities. The nest is surrounded by residential development with approximately 4 single-family dwellings within 330 feet, and approximately 24 single-family dwellings (7 of which are on the Lake Sammamish waterfront) within 660 feet. Activities associated with the residences include yard and house maintenance (e.g., lawn mowing, leaf blowing), as well as social gatherings and recreational activities. East Lake Sammamish Parkway and local neighborhood roads with vehicular and bicycle traffic are also within the 330-foot and 660-foot distances, and pedestrians and bicyclists currently use the Interim Use Trail.

Typical construction activities that will occur within 660 feet of the nest include site preparation and temporary erosion and sedimentation control installation, clearing and grubbing, and removals; drainage structure replacement; earthwork; trail and driveway crushed surfacing and paving; and finishing work (planting, striping, signing, fencing). Work that generates levels of noise and human activity substantially greater than current conditions will be conducted outside of the bald eagle breeding season (January 1 through August 15) to the extent practicable. Measures implemented to minimize noise to adjacent residents are also expected to avoid or minimize the risk of disturbance to bald eagles. Where practical, native evergreen vegetation will be incorporated into the landscape plan for year-round screening within 660 feet of the nest.

4.5 Critical Aquifer Recharge Areas

The city code provides groundwater quality and quantity protection standards for development within CARAs (SMC 21A.50.280). The new trail surface will be non-pollution generating impervious surface; therefore, water quality treatment facilities are not required. Although the project proposes driveway reconfigurations, there are no target areas within the project requiring water quality treatment (Parametrix 2016). More than 50 threshold discharge areas⁶ (TDAs) were identified within the project

⁶ Threshold discharge area is defined as an on-site area draining to a single natural discharge location, or to multiple natural discharge locations that combine within one-quarter mile downstream, as determined by the shortest flowpath (SMC 24.06.040).

area (Parametrix 2016). Project TDAs are delineated in three ways: areas that runoff directly to the lake via overland flow or manmade conveyance, areas that runoff directly to streams that cross the trail and flow into Lake Sammamish, and areas that runoff to adjacent private property landscaping. The trail has qualified for an exemption for the flow control facilities in 50 of the 56 TDAs (Parametrix 2016). Of the six remaining TDAs, five meet the direct discharge exemption requirements to Lake Sammamish, and an infiltration facility will be used to meet flow control requirements in one (Parametrix 2016).

The trail has qualified for an exception from the flow control facilities and flow control best management practice (BMP) requirements (Parametrix 2016). While there are no flow control facilities proposed for the project, infiltration trenches are proposed in a few areas to infiltrate runoff from the trail. There are no target areas within the project requiring water quality treatment (Parametrix 2016). The new trail surface will be non-pollution generating impervious surface; therefore, water quality treatment facilities are not required. No impacts to critical aquifer recharge areas will occur as a result of the project.

5. MITIGATION APPROACH

This section describes the sequencing approach used for mitigating project impacts. The mitigation sequencing approach is based on a hierarchy of avoiding and minimizing adverse impacts through careful design, rectifying temporary impacts, and compensating for unavoidable adverse impacts (Ecology et al. 2006). Permanent and temporary impacts on wetlands, wetland buffers, streams, stream buffers, and the Lake Sammamish shoreline setback are shown in Appendix D. Mitigation for project impacts is shown in Appendix E.

5.1 Avoidance and Minimization

The avoidance and minimization of critical area impacts was a guiding principle in the preliminary design of this project. It started with the general alignment of the trail. King County worked diligently to avoid and minimize permanently affecting wetlands and streams. Design refinements were considered and incorporated, where feasible, to reduce the potential loss of existing wetland and stream habitat. King County is proposing an alignment that follows the existing Interim Use Trail, which is also the location of a former railbed. With this alignment, most wetlands will be avoided, culvert replacements will provide a benefit to streams with a net increase in open channel, and buffer and shoreline setback impacts will be limited to the area needed to widen the existing trail. The current design also incorporates the following design strategies to minimize critical area and buffer impacts:

- Apply the narrowest typical trail section when adjacent to critical areas. In the environmental documentation for the proposed trail, King County envisioned a trail as wide as 27 feet in some areas, which incorporated a separate soft-surface trail for pedestrian use. Based on the amount of impacts that resulted from this configuration and subsequent discussions with the City of Sammamish, King County has narrowed the proposed width of the trail to 18 feet (the narrowest typical section) throughout Sammamish. This includes 12 feet of pavement, two 2-foot shoulders, and two 1-foot clear zones.
- Use retaining walls to narrow the trail section where critical areas are adjacent or crossed. This includes adding 27 retaining walls for a total of 7,784 linear feet adjacent to wetlands, streams, and buffers.
- Shift alignments away from critical areas. Throughout Sammamish, the proposed configuration of the trail encompasses the existing gravel trail. Slight shifts in the center line and adjustments to the profile were closely examined and incorporated, where practicable, to minimize critical area impacts.
- Reduce potential for human intrusion through the use of fencing and signage. King County typically uses split-rail fence between the trail and an adjacent critical area, unless an edge hazard warrants a different kind of fence (e.g., chain link).

BMPs will be implemented to avoid or reduce adverse impacts on critical areas during construction. BMPs will be implemented for pollution control, erosion control, and stormwater management. Measures used may include mulching, matting, and netting; filter fabric fencing; quarry rock entrance mats; sediment traps and ponds; and surface water interceptor swales and ditches. Significant long-term water quality impacts are not expected if erosion control BMPs, stormwater, and spill containment measures are properly implemented, monitored, and maintained during construction. A temporary erosion and sedimentation control plan and construction stormwater pollution prevention plan will be implemented to minimize and control pollution and erosion from stormwater.

5.2 Restoration of Temporary Impacts

Temporary impacts on wetlands (0.59 acre), wetland buffers (2.37 acres), stream buffers (0.35 acre), and the shoreline setback (0.17 acre) will be restored on site at the affected locations along the project corridor after construction. These temporarily disturbed areas will be reseeded or replanted with appropriate native species when construction activities are completed. Temporary impacts on stream channels will be regraded and substrate will be restored with gravel and rounded cobble.

5.3 Compensatory Mitigation

Even with the implementation of the avoidance and minimization effort above, permanent impacts on wetlands, streams, wetland buffers, stream buffers, and the Lake Sammamish shoreline setback are unavoidable. King County will replace the area and functions lost through compensatory mitigation. Mitigation areas are shown on the plans in Appendix E.

5.3.1 Wetlands, Wetland Buffers, Stream Buffers, and Shoreline Setback

5.3.1.1 Wetland Regulatory Requirements

The City of Sammamish requires compensatory mitigation for alteration to wetlands to achieve equivalent or greater biological functions, as well as a no net loss of area (SMC 21A.50.310). Mitigation actions shall also provide equivalent or greater functions and values compared to conditions existing prior to the proposed alteration. Wetland compensatory mitigation may consist of wetland reestablishment or creation, rehabilitation, or reestablishment or creation and enhancement. To determine the area required for wetland compensatory mitigation, project staff reviewed and compared the regulatory requirements of the City of Sammamish critical areas regulations (SMC 21A.50) and the guidelines established in Wetland Mitigation in Washington State (Ecology et al. 2006). Tables 5-1 and 5-2 show the recommended mitigation ratios for Category III and IV wetlands as established in those two documents.

The proposed mitigation type for this project is a combination of wetland reestablishment or creation and enhancement. The City of Sammamish and Ecology have similar ratios for this type, except the enhancement component ratio is 4:1 for Category III wetlands under Ecology, and 2:1 under the City requirements. King County will apply the most stringent mitigation ratios (Ecology's) to compensate for wetland loss. The results of applying the recommended mitigation ratios are shown in Table 5-3. King County will provide a minimum of 0.22-acre wetland reestablishment or creation and 0.64-acre wetland enhancement.

Category and Type of Wetland	Wetland Reestablishment or Creation	Wetland Rehabilitation	Wetland Reestablishment or Creation (R/C) and Enhancement (E)
Category III	2:1	4:1	1:1 R/C and 2:1 E
Category IV	1.5:1	3:1	1:1 R/C and 2:1 E

Table 5-1. City of Sammamish	Mitigation Ratios ^a
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a SMC 21A.50.310

Category of Wetland Impacts	Wetland Reestablishment or Creation	Wetland Rehabilitation Only	Wetland Reestablishment or Creation (R/C) and Rehabilitation (RH)	Reestablishment or Creation (R/C) and Enhancement (E)	Enhancement Only
Category III	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1
Category IV	1.5:1	3:1	1:1 R/C and 1:1 RH	1:1 R/C and 2:1 E	6:1

Table 5-2. Ecology-Recommended Mitigation Ratios for Projects in Western Washington^a

^a Ecology et al. (2006).

Table 5-3. Mitigation Area Required Applying the Ecology-Recommended Mitigation Ratios forProjects in Western Washington for Reestablishment or Creation and Enhancement ^a

	-	Reestablishme	ent or Creation	Enhancement	
Wetland Category	Impact (SF)	Mitigation Ratio	Mitigation Area (SF)	Mitigation Ratio	Mitigation Area (SF)
Category III	4,462	1:1	4,462	4:1	17,848
Category IV	4,967	1:1	4,967	2:1	9,934
Total	9,429		9,429		27,78
			(0.22 acre)		(0.64 acre

5.3.1.2 Wetland Buffer Regulatory Requirements

The City of Sammamish requires compensatory mitigation for alteration to wetland buffers to achieve equivalent or greater biological functions, as well as a no net loss of area (SMC 21A.50.310). Mitigation actions shall also provide equivalent or greater functions and values compared to conditions existing prior to the proposed alteration. King County is proposing a minimum 1:1 mitigation ratio for impacts on wetland buffers by increasing the buffer around one wetland and enhancing this area where feasible. For this project, King County will add a minimum of 1.48 acres of wetland buffer.

5.3.1.3 Site Selection

The City of Sammamish has a preference that mitigation actions shall be in-kind and conducted within the same subbasin and on the same site as the alteration. The right-of-way consists of a long, linear corridor that abuts small portions of several wetlands, wetland buffers, stream buffers, and shoreline setbacks; the possibility was considered that mitigation areas in the trail corridor would be small and fragmented. However, the project team was able to identify on-site mitigation areas with available acreage and the opportunity to increase the ecological benefits at 21 locations in the corridor (Table 5-4, Appendix E). Sites adjacent to the trail also offer easy access for both construction and maintenance with minimal disturbance to other habitats. On-site areas will provide an opportunity for visual and aural screening of the East Lake Sammamish Parkway for both wildlife and trail users. Specific mitigation areas are discussed in the following section.

Station	Wetland/Stream Name	Wetland Creation/ Restoration (Acres)	Wetland Enhancement (Acres)	Wetland Buffer Addition Area (Acres)	Wetland Buffer Enhancement (Acres)	Stream Buffer Enhancement (Acres)	Culvert Replacement	Shoreline Setback Enhancement (Acres)
329+00 to 333+50	Wetland 18C	~ "		0.35	0.18			
339+25 to 342+25	Shoreline Setback							0.03
365+50 to 366+00	Wetland 22AB		0.05					
367+00 to 371+50	Wetland 22CD	0.13	0.07		0.13			
367+50 to 367+75	Unnamed Stream 7					0.02		
371+75 to 374+75	Wetland 23A			0.15				
373+00 to 374+75	Shoreline Setback							0.04
373+00 to 374+75	Wetland 23B		0.03					0.01
374+75 to 378+75	Wetland 23C		0.08	0.16	0.09			
379+14	Pine Lake Creek						Y	
379+25 to 380+25	Wetland 24B	0.03	0.03					
383+75 to 384+75	Wetland 24B		0.04					
385+50 to 391+75	Wetland 24C			0.13				
396+50 to 400+00	Wetland 25A	0.03		0.24	0.02			
401+75	Stream 0155						Y	
403+50 to 405+75	Wetland 25B	0.02	0.14					
410+50 to 413+25	Ebright Creek					0.16	Y	
418+75 to 422+25	Wetland 26A		0.09	0.15	0.04			
423+00 to 424+00	Wetland 26C		0.02		< 0.01			
424+00 to 424+75	Zaccuse Creek					0.02	Y	
424+75 to 426+25	Wetland 26A		0.08					
434+25 to 438+75	Wetland 28B		0.01	0.30	0.09			
441+40	George Davis Creek						Y	
464+28	Stream 0143L						Y	
462+50 to 465+75	Shoreline Setback							0.01
	TOTAL	0.22	0.64	1.48	0.56	0.20		0.09

Table 5-4. Proposed Mitigation Locations and Type

5.3.1.4 Proposed Mitigation

King County is proposing to complete compensatory mitigation at 21 sites in the Master Plan Trail right-ofway (Table 5-4, Appendix E). The proposed mitigation will include a minimum of 0.22 acre of wetland creation/restoration, 0.64 acre of wetland enhancement, 1.48 acres of wetland buffer addition, 0.56 acre of wetland buffer enhancement, 0.20 acre of stream buffer enhancement, and 0.09 acre of shoreline setback enhancement. Generally, the proposed mitigation sites are currently dominated by invasive species (e.g., Himalayan blackberry, reed canarygrass, and Scotch broom) and maintained lawn or yard with small structures, but are devoid of native trees and shrubs. The proposed compensatory mitigation will include removing invasive vegetation, lawn, landscaped yard, and structures; tilling and amending soil; adding mulch; and planting native vegetation. Wetland creation/restoration will also include excavating and grading to appropriate elevations to support wetland conditions. Deciduous and coniferous tree species and shrubs will be planted to increase plant diversity, increase vegetation complexity, offer visual and aural screening, improve fish and wildlife habitat, and provide shade, leaf litter, future snags, and woody debris. Habitat features (including habitat logs and brush piles) will be added to the mitigation areas. Existing desirable vegetation will be protected where feasible. Fencing will be installed and maintained along the trail adjacent to all mitigation areas to minimize intrusion and disturbance.

5.3.2 Streams

5.3.2.1 Regulatory Requirements

The City of Sammamish requires compensatory mitigation for alteration to streams in order to achieve equivalent or greater functions (SMC 21A.50.350).

5.3.2.2 Site Selection

The City of Sammamish has a preference that mitigation actions shall be in-kind and conducted within the same subbasin and on the same site as the alteration. Culvert replacement and stream regrading will occur on site as described in Section 4.2.1.

5.3.2.3 Proposed Mitigation

King County is proposing a 1:1 mitigation ratio for impacts on stream buffers by applying enhancement. King County will provide a minimum of 0.20-acre stream buffer enhancement.

The project proposes to replace culverts on six streams (all of which are Type F) at six trail crossings, resulting in a net improvement to stream function and habitat. Additionally, two more culvert crossings will be replaced west of the trail. The additional culvert replacement sites are at the downstream road crossing (East Lake Sammamish Shore Lane SE) of Pine Lake Creek and the downstream road crossing (East Lake Sammamish Shore Lane NE) of Zaccuse Creek. All but one of the new culverts will be wider and shorter than the existing culverts, resulting in a net gain of 72 linear feet (610 square feet) of open channel in the project area. Unnamed Streams 7, 8 (South Fork), and 13, all classified as Type F, are the only streams where a net loss of open channel will occur (24 linear feet [114 square feet] for the three streams combined). All Type F stream culvert replacements are designed to fish passage standards.

Replacement of the culverts at the six trail crossings will improve connectivity to approximately 660 feet of upstream habitat between the Interim Use Trail and East Lake Sammamish Parkway, with the potential for access to an additional 46,450 feet of habitat upstream of East Lake Sammamish Parkway. Replacement of the culverts on Pine Lake Creek and Zaccuse Creek under East Lake Sammamish Shore Lane will improve connectivity to approximately 200 feet of habitat between Lake Sammamish and the trail crossings on those two streams. The culvert replacements are described in Section 4.2.1.

5.3.3 Shoreline Setback Impacts

Similar to the City of Sammamish Environmentally Critical Areas Regulations, the City's SMP also applies the concept of no net loss of ecological functions (SMC 25.02.010(58)). King County is proposing a 1:1 mitigation ratio for impacts to the shoreline setback by applying enhancement. King County will provide a 0.09-acre shoreline setback enhancement.

5.4 Mitigation Goals, Objectives, and Performance Standards

The overall goal of the mitigation effort is to replace the habitats and functions lost as a result of the project. The proposed mitigation will accomplish this by replacing 8 fish barrier culverts on 6 Type F streams with pipes that are fish passable, creating/restoring 0.22 acre of wetland, enhancing 0.64 acre of wetland, increasing the buffer of 7 wetlands by 1.48 acres, enhancing 0.56 acre of wetland buffer, enhancing 0.20 acre of stream buffer, and enhancing 0.09 acre of shoreline setback. Specific goals and objectives formulated to achieve this result are presented below.

5.4.1 Mitigation Goals

The mitigation goals are:

- Replace 8 fish barrier culverts on 6 Type F streams with fish passable culverts.
- Create/restore 0.22 acre of wetland.
- Enhance 0.64 acre of wetland.
- Increase and enhance the buffer of 7 wetlands by 1.48 acre.
- Enhance 0.56 acre of wetland buffer.
- Enhance 0.20 acre of stream buffer.
- Enhance 0.09 acre of shoreline setback.

Achievement of these goals is expected to provide the following improvements to wetland, stream, wetland buffer, stream buffer, and shoreline setback functions:

- Provide additional fish habitat by removing fish barriers, increasing open stream channel, and opening up available upstream habitat.
- Increase storage of floodwaters and retention of sediments and nutrients by creating/restoring wetland contiguous with Wetlands 22CD, 24B, 25A, and 25B.
- Increase the production of organic matter by planting trees and shrubs in the created/restored wetland, enhanced wetland, increased wetland buffer, enhanced wetland buffer, enhanced stream buffer, and enhanced shoreline setback.
- Increase fish and wildlife habitat and improve biological diversity by planting with a variety of native wetland and buffer plant species and installing habitat features (habitat logs and brush piles).

5.4.2 Mitigation Objectives and Performance Standards

5.4.2.1 Wetlands

Wetland Hydrology

Objective 1: Establish adequate hydrology to maintain wetland characteristics for the 0.22acre created/restored wetland area.

Performance Standards:

Year 1, 2, 3, 5, 7, and 10 The soils of the created/restored wetland areas will remain inundated or saturated to the surface for a minimum of 30 consecutive days during the growing season for each monitoring year.

Plant Communities

Objective 2: Establish a minimum of 0.22-acre forested and scrub-shrub wetland at the created/restored wetland areas.

area to establish a baseline for areal cover.

Performance Standards:

Year 1	Survival of planted woody species in created/restored and enhanced wetland areas will be at least 80 percent.
Year 2	Record percent cover of native woody species in created/restored wetland

- Year 3 Native woody species will achieve a minimum of 25 percent areal cover in the created/restored wetland areas.
- Year 5 Native woody species will achieve a minimum of 50 percent areal cover in the created/restored wetland areas.
- Year 7 Native woody species will achieve a minimum of 70 percent areal cover in the created/restored wetland areas.
- Year 10 Native woody species will achieve a minimum of 80 percent areal cover in the created/restored wetland area.

Objective 3: Enhance by planting native species a minimum of 0.64-acre forested and scrubshrub wetland at the enhanced wetland areas.

Performance Standards:

- Year 1 Survival of planted woody species in enhanced wetland areas will be at least 80 percent.
- Year 2 Record percent cover of native woody species in enhanced wetland area to establish a baseline for areal cover.
- Year 3 Native woody species will achieve a minimum of 25 percent areal cover in the enhanced wetland areas.
- Year 5 Native woody species will achieve a minimum of 50 percent areal cover in the enhanced wetland areas.

- Year 7 Native woody species will achieve a minimum of 70 percent areal cover in the enhanced wetland areas.
- Year 10 Native woody species will achieve a minimum of 80 percent areal cover in the enhanced wetland area.

5.4.2.2 Streams

Instream Habitat

Objective 4: Replace existing fish barrier culvert at the (six) trail crossings on Pine Lake Creek, Stream 0155, Ebright Creek, Zaccuse Creek, George Davis Creek, Stream 0143L, and (two) downstream road crossings on Pine Lake Creek and Zaccuse Creek with fish passage culvert to open up available upstream habitat.

Performance Standards:

Year 1, 2, and 3 Constructed habitat elements including the new fish passable culverts, regraded channels, and streambed material will remain in place as constructed at all 8 culvert replacement sites.

5.4.2.3 Buffers/Setback Areas

Objective 5: Establish a minimum of 2.04-acre forested wetland buffer, 0.20-acre forested stream buffer, and 0.09-acre forested shoreline setback at the increased/enhanced wetland buffer, enhanced stream buffer, and enhanced setback areas.

Performance Standards:

- Year 1 Survival of planted woody species in increased/enhanced wetland buffer, enhanced stream buffer, and enhanced shoreline setback areas will be at least 80 percent.
- Year 2 Record percent cover of native woody species in increased/enhanced wetland buffer, enhanced stream buffer, and enhanced shoreline setback areas to establish a baseline for areal cover.
- Year 3 Native woody species will achieve a minimum of 25 percent areal cover in the increased/enhanced wetland buffer, enhanced stream buffer, and enhanced shoreline setback areas.
- Year 5 Native woody species will achieve a minimum of 50 percent areal cover in the increased/enhanced wetland buffer, enhanced stream buffer, and enhanced shoreline setback areas.
- Year 7 Native woody species will achieve a minimum of 70 percent areal cover in the increased/enhanced wetland buffer, enhanced stream buffer, and enhanced shoreline setback areas.
- Year 10 Native woody species will achieve a minimum of 80 percent areal cover in the increased/enhanced wetland buffer, enhanced stream buffer, and enhanced shoreline setback areas.

5.4.2.4 Invasive Species

Objective 6: Limit invasive non-native species throughout the mitigation site planting areas. Performance Standard:

Year 1, 2, 3, 5, 7, and 10	Himalayan blackberry, cutleaf blackberry, Scotch broom, English ivy, reed canarygrass, and hedge false bindweed will not exceed 20 percent areal cover in all planting areas.
Year 3	100 percent removal of Japanese knotweed by Year 3 in the Wetland 22CD buffer enhancement area.

5.4.2.5 Wildlife Habitat

Objective 7: Provide wildlife habitat.

Performance Standard:

Year 1, 2, 3, 5, 7, and 10	Increase in areal cover of native woody species in all
	mitigation areas, as measured in Objectives 3, 4, and 5, to be used as a surrogate to indicate increasing habitat functions.
Year 1, 2, 3, 5, 7, and 10	Installed habitat features are present and functional.

5.4.2.6 Anthropogenic Disturbance

Objective 8: Protect the mitigation sites from anthropogenic disturbance.

Performance Standard:

Year 1 through 10	Conduct qualitative monitoring to assess the status of the sites yearly during the 10-year monitoring period to monitor for human disturbance, including but not limited to filling, trash, and vandalism.
Year 1 through 10	Install and maintain fences and appropriate signs along the trail adjacent to each site to identify their protected status.

5.5 Record Drawings

Record drawings and/or a report documenting the as-built or installed conditions will be prepared after construction and plantings are complete. The report will include the following components: (1) drawings that clearly identify the boundaries of the mitigation areas; (2) locations of the sampling and monitoring sites (including photo-point locations); (3) locations of hydrology monitoring stations; (4) photographs of the mitigation sites; and (5) an analysis of any changes to the mitigation plan that occurred during construction. A copy of the as-built report will be sent to the USACE within 30 days of completion of construction and planting.

5.6 Monitoring

The mitigation areas will be monitored during and after construction. During construction, monitoring will ensure that the BMPs are observed to minimize impacts, and the on-site construction work (including grading and planting) will be coordinated to ensure that the sites are constructed as designed.

After construction is completed, long-term monitoring will be performed annually to ensure that the goals and objectives of the mitigation are being met. Monitoring of the mitigation areas will be performed over a 10-year period by a qualified professional (SMC 21A.50.145; 21A.50.300). A combination of quantitative and qualitative monitoring activities will be used to assess the management objectives and associated performance standards described in the mitigation plan. Activities will include site visits to monitor unnatural site disturbance, photographs to document site development, and data collection for the quantitative evaluation of performance standards. The results of the monitoring will be submitted to the permitting agencies.

Appropriate contingency measures will be developed, as needed, by a qualified professional to ensure that the sites develop healthy vegetation that meets the obligations described in this mitigation plan and the associated permits.

5.6.1 Quantitative Monitoring

The following bulleted items describe the methods to be used for the quantitative monitoring, monitoring schedule, and report deadlines.

- Hydrology will be monitored by digging shallow pits during each visit or by installing shallow monitoring wells.
- The planting sites will be assessed by an appropriate quantitative vegetative cover field assessment methodology. The line intercept method will be used for determining percent areal cover for woody and invasive species.
- Quantitative vegetation assessments will follow the same method in each consecutive monitoring year.
- Quantitative vegetation assessments will be performed between June 15 and September 15 of each monitoring year.
- Monitoring reports will be sent to agencies requiring monitoring reports by February 15 of the following year.
- Permanent photographic stations will be established to monitor the development of the sites. Photographs will be taken along transect lines and from vantage points that capture the general mitigation area. All photographs will be labeled to identify locations.

5.6.2 Qualitative Monitoring

Qualitative monitoring will be conducted as follows:

- A qualified professional will qualitatively assess the constructed habitat elements including the new fish passable culverts, regraded channels, and streambed material for the first 3 years.
- Qualitative assessment will be performed yearly to visually assess the health of plants and identify areas that may need control of non-native invasive species or other maintenance activities.
- During all qualitative monitoring years, photographic documentation of the sites will occur from permanent photograph stations.

5.7 Maintenance

The proposed mitigation is intended to achieve the performance standards with minimal ongoing maintenance. However, King County will manage and maintain the site for 10 years, or until all performance standards are met and the site is closed with the approval of permitting agencies.

Planted vegetation species should be adapted to varying site conditions in the Puget Sound lowland, although supplemental irrigation may be needed during the first two growing seasons after installation to ensure the long-term survival of the plants. The need for irrigation will be evaluated based on the conditions observed during the establishment period.

To ensure rapid establishment of the plant community, trees and shrubs will be planted closer together than would generally occur in natural mature stands. Some natural mortality is expected to occur during the monitoring period. All dead and downed woody material will be left in place to provide microhabitats for wildlife. Plants will be replaced as needed to meet performance standards.

Maintenance to control nuisance species in the mitigation areas may be necessary. During the monitoring period, if it becomes evident that invasive species are impeding establishment of desirable native plants, measures will be implemented to control nuisance species. A progressively aggressive approach will be used to control nuisance species. Control measures will first include hand cutting and/or grubbing and removal; if this fails, an environmentally sensitive herbicide (e.g., Rodeo or equivalent) may be applied.

5.8 Contingency Measures

Adaptive management is driven by the monitoring results and the performance standards. If the performance standards are not met, adaptive management activities will be implemented to achieve the desired condition. Management activities may include implementation of contingencies described in Table 5-5, or other appropriate measures. Site conditions will be evaluated to determine the cause of the problem and the most appropriate countermeasure.

Information from the annual monitoring program will be used to identify any maintenance and/or corrective actions. If problems are identified in monitoring, King County biologists will determine the cause of the problem and implement proper maintenance or corrective activities. These activities will be discussed in the annual monitoring report.

5.9 Performance Security/Financial Assurance

This mitigation project will be sponsored by King County. The County will implement a suitable mechanism to ensure that the project is implemented successfully and monitored for a minimum of 10 years, or until the project mitigation is deemed a success by achieving its performance standards.

5.10 Site Protection

The County owns the property underlying the mitigation sites. They will protect the mitigation sites in perpetuity through a legal mechanism that permits maintenance and monitoring of the mitigation area. This mechanism shall be retained by the County and may be submitted to the USACE after permit issuance, if required. In addition, permanent fencing and/or signs indicating that the area is a natural or sensitive or critical area to be protected from disturbance will be posted along the boundaries of each mitigation area.

Problem	Contingency Measure King County biologists (or other qualified biologist) will assess the sites to determine what conditions are preventing the plants from thriving. Appropriate measures will be taken to correct any conditions that are limiting growth. Lost plants will be replaced with appropriate native species unless appropriate native woody species			
Less than 80% of planted woody species survive in Year 1	sites to determine what conditions are preventing the plants from thriving. Appropriate measures will be taken to correct any			
Percent cover for woody species not met during Years 3, 5, or 7	King County biologists (or other qualified biologist) will assess the sites to determine what conditions are preventing the plants from thriving. Appropriate measures will be taken to correct any conditions that are limiting growth.			
Invasive species exceed percent cover threshold	Implement/revise invasive species control plan.			
Performance standards not met at Year 10	Continue the monitoring regime for 1 additional year. The sites will continue to be evaluated every year until each site has met the stated performance standards associated with management objectives. Other contingency measures may be implemented during this period.			

Table 5-5. Contingency Measures for	or the Mitigation Sites
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5.11 Long-term Management Plan

The mitigation sites are located on King County property. After attainment of performance standards and acceptance of the mitigation project by the USACE, the County will implement a long-term management plan for the sites as part of trail operations.

Site management activities will include noxious weed control, damage repair from vandalism, trash removal, and signage maintenance.

Monitoring reports or technical memoranda will document annual management activities and identify key issues and actions needed for the following year. Reports are anticipated to be submitted every year to the USACE, by the end of the calendar year, for the first 10 years following attainment of performance standards.

The County will issue a letter of assurance to cover long-term management costs of the mitigation site to the USACE ensuring the County's compliance with the long-term management plan.

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APPENDIX A

Wetland Determination Data Forms

Data Plot #: 15A-SP1 15A

Wetland:

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation			Date:	10/30/20	007 Revisited 03-11-14
Applicant/Owner: King County			County:	King C	County
Investigator: Linda Krippner/Michael Muscari		_	State:	WA	
□ 1987 Method	VA St. Meth	od			Community ID: PFO/PSS 03-11-14 - PFO
Do Normal Circumstances exist on the site? Yes X		Х	No		Field Plot ID: 15A-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes		No	Х	
Is the area a potential Problem Area? Yes			No	Х	
Remarks (Explain sample location, disturbances, pro	Remarks (Explain sample location, disturbances, problem areas):				

This sample plot is located approximately 6' west of flag 15A-3.

GETATION (Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	Agrostis spp. 40% Equisetum telmateia 40%
1. Agrostis spp.	80	Herb	FAC	Phalaris arundinacea 30%
2 Equisetum telmateia	40	Herb	FACW	Hedera helix 5%
9 3. Phalaris arundinacea	30	Herb	FACW	Rubus armeniacus 2%
4. Scirpus microcarpus	10	Herb	OBL	 Rubus spectabilis 30% Alnus rubra 30%
5. Rubus spectabilis	30	Shrub	FAC+	– Fraxinus latifolia 5%
6. Alnus rubra	30	Tree	FAC	Thuja plicata 10%
7 Thuja plicata	10	Tree	FAC	moss 60%

100

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

Grasses and shrubs had been mowed. The area is lawn interspersed with shrubs and trees. The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Re Stream, Lake, or T	,	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Field Observations:		Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) 15 (in.) 6 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describ	e recent precipitation, hydrol	logic modifications, local variations, etc.):

Water collecting in pit at 15" after 5 min.

Soil saturation in the upper 12 inches satisfies wetland hydrology criterion.

03-11-14 Observations - No surface water. Soil saturated at surface. No free water in pit.

Parametrix

							Data Plot #	: 15A-SF	21
							Wetland:	15A	
Project/Site	e: ELST Re-de	elineation			Date:	10/30/2007	R	evisited 03-1	1-14
		enneation			Dale.	10/30/2007			
SOIL Soil Surv	ey Data:								
Map Unit	Name: Alder	wood gravelly sandy loa	m, 6 to 15 s	% slopes		Drainage Clas	ss: Moderately	well drained	t
						Field Observa	tions Confirm	Mapped Typ	e?
Taxonom	y (Subgroup):	Entic Durochrepts				Yes	No <u>X</u>	NA	
Profile De	- escription:								
Depth	Horizon	Matrix Color	Mottle C			Mottle		Texture, Cor	
(Inches)	Designation	(Munsell Moist)	(Munsell	Moist)		Abundance/C	ontrast	Rhizosphere	s, etc.
0-14	0	10YR 2/1	none			none		mucky sand	
14-16	<u>A</u>	10YR 3/1	none			none		sandy gravel	
-	bil Indicators:				Lista	d an Lludria Cail	o Liot		
	listosol listic Epipedon					d on Hydric Soil n Concretions	SLISI		
						nic Streaking in	Sandy Soils		
		ic Moisture Regime			Ŭ	es (Redoximorp			
	educing Condit	0				r (Explain in Re	,		
	leyed or Low-C			03-11-1		vations -	,		
——н	ligh Organic Co	ontent in Surface Layer		0-14	10Y	R 2/1 (100%)	none	none	silt loam w. gravel
Bemarks	(Describe soil	disturbances, local vari	ations. etc.	14-18): Bemar l	10Y ks - High	R 2/1 (100%)	none	none	silt loam
		th 0 layer. Low chroma				r organie conter	it throughout p	ionic.	
		-		-					
WETLA	ND DETER	MINATION							
Hydrophy	tic Vegetation	Present? Ye	es X	No		Is th	is Sampling F	Point Within	a Wetland?
Hydric Sc			X						
Tryunc oc	oils Present?	Ye	es X	No			Yes X	No	

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

				Data Plot #:	15A-SP2
				Wetland:	Upland near 15A
WETLAI	ND DETI	ERMINA	TION		
(Modified from: 1987 A		etlands	Delineatio	n Manual)	
(-	<u> </u>
Project/Site: ELST Re-delineation		Date:	0/30/2007	Revi	sited 03-11-14
Applicant/Owner: King County		County:	King County	/	
nvestigator: Linda Krippner/Michael Muscari		State:	WA		
_ 1987 Method	. Method		Co	mmunity ID: U	pland Forest/Herb
Do Normal Circumstances exist on the site? Y	es X	No	— Fie	ld Plot ID: 15A	-SP2
s the site significantly disturbed (Atypical Situation)? Y	/es	No	Х		
s the area a potential Problem Area? Y	′es	No	Х		
Remarks (Explain sample location, disturbances, problem	areas):				
This sample plot is located several feet northeast of flag 1.					
3-11-14 Observations - This sample plot vicinity has been	disturbed	with clearii	ng, cutting, an	d landscaping a	t edge.
				02 11 14 0	Observations
/EGETATION (Dominant species are checked)	% Cov	er Stratur	n Indicato	Equisatum	telmateia 70%
Plant Species				Calystegia	sepium 15%
 1. Equisetum telmateia 2 Phalaris arundinacea 	<u>20</u> 30	Herb Herb	FACW FACW		erasiformis 15% eniacus 20%
2 Phalaris arundinacea 3 Rubus armeniacus	10	Shrub	FACU		at the Alnus rubra have
✓ 4 Alnus rubra	20	Tree	FAC		There is a pile of wood in
Percent of Dominant Species that are OBL, FACW, or F	FAC			corner of R	OW.
except FAC-). Include species noted (*) as showing	10	00			
		00			
morphological adaptations to wetlands. "T" indicates trace.					
			c.):		
Remarks (Describe disturbances, relevant local variations	, seasonal	effects, et	,	vegetation criter	ion is satisfied.
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gre	, seasonal	effects, et	,	vegetation criter	ion is satisfied.
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gre	, seasonal eater than 5	effects, et	Hydrophytic		
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gre HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, etc 50 percent. /etland Hy	Hydrophytic drology Indi	vegetation criter cators (Descri	
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gre HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	, seasonal eater than 5	effects, etc 50 percent. /etland Hy	Hydrophytic drology India Indicators:	cators (Descri	
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, etc 50 percent. /etland Hy	Hydrophytic drology India Indicators:	cators (Descri	be in Remarks):
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other	, seasonal eater than 5	effects, etc 50 percent. /etland Hy	Hydrophytic drology India Indicators: Inundate Saturate	cators (Descri ed ed in Upper 12 ir	be in Remarks):
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, etc 50 percent. /etland Hy	Hydrophytic drology India Indicators:	cators (Descri ed ed in Upper 12 ir ⁄larks	be in Remarks):
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, etc 50 percent. /etland Hy	Hydrophytic rdrology India Indicators: Inundata Saturata Water M Drift Lin	cators (Descri ed ed in Upper 12 ir ⁄larks	be in Remarks):
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, etc 50 percent. /etland Hy	Hydrophytic drology India Indicators: Inundata Saturata Water M Drift Lin Sedime	cators (Descri ed ed in Upper 12 ir /larks es	be in Remarks): aches
Aerial Photograph Other X No Recorded Data Available Field Observations:	, seasonal eater than 5	effects, et 50 percent. /etland Hy Primary	Hydrophytic Indicators: Inundate Saturate Water M Drift Lin Sedime Drainag	cators (Descri ed ed in Upper 12 ir /arks es nt Deposits e Patterns in We	be in Remarks): aches etlands
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, et 50 percent. /etland Hy Primary	Hydrophytic drology India Indicators: Inundata Saturata Water M Drift Lin Sedime Drainag ary Indicators	cators (Descri ed ed in Upper 12 in Aarks es nt Deposits e Patterns in We s (2 or more requ	be in Remarks): nches etlands nired):
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, et 50 percent. /etland Hy Primary	Hydrophytic drology Indi- Indicators: Inundate Saturate Water M Drift Lin Sedime Drainag ary Indicators Oxidized	cators (Descri ed ed in Upper 12 in Marks es nt Deposits e Patterns in We s (2 or more requ d Rhizospheres	be in Remarks): aches etlands
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, et 50 percent. /etland Hy Primary	Hydrophytic drology India Indicators: Inundata Saturate Water M Drift Lin Sedime Drainag ary Indicators Oxidized Water-S	cators (Descri ed ed in Upper 12 in Marks es nt Deposits e Patterns in We s (2 or more requ d Rhizospheres i Stained Leaves	be in Remarks): nches etlands nired):
Remarks (Describe disturbances, relevant local variations The percent of dominant species that are hydrophytic is gree HYDROLOGY Recorded Data (Describe in Remarks):	, seasonal eater than 5	effects, et 50 percent. /etland Hy Primary	Hydrophytic drology India Indicators: Inundate Saturate Water M Drift Lin Sedime Drainag ary Indicators Oxidized Water-S Local So	cators (Descri ed ed in Upper 12 in Marks es nt Deposits e Patterns in We s (2 or more requ d Rhizospheres	be in Remarks): nches etlands nired): n Upper 12 inches

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): Soils moist but not saturated. No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

Parametrix

							15A-SP2
			Field Observ Yes Color Mottle ell Moist) Abundance/0 none none gra slope. Listed on Hydric Sc Fe/Mn Concretions Organic Streaking i Mottles (Redoximor Other (Explain in Re	Wetla	and:	Upland near 15A	
Project/Site: ELST Re-d	elineation		Date:	10/30/2007		Revis	sited 03-11-14
SOIL Soil Survey Data:							
Map Unit Name: Alder	wood gravelly sandy lo	am 6 to 15% slopes		Drainage C	ass: Mod	eraterly w	vell drained
				Field Obser	vations Co	onfirm Ma	pped Type?
Taxonomy (Subgroup):	Entic Durochrepts			Yes	No	X NA	
Profile Description:	· ·				-		
Depth Horizon (Inches) Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)			Contrast		kture, Concretions, izospheres, etc.
0-12 A	10YR 2/1	none		none		rocl	k fill sand
Hydric Soil Indicators:	Remarks - Edge of	1 (100%) none	no	ne g	ravelly sar	ndy loam	
Hydric Soil Indicators:	0-18 10YR 2/ Remarks - Edge of	1 (100%) none				ndy loam	
Histosol Histic Epipedon	0-18 10YR 2/ Remarks - Edge of	1 (100%) none	Listed	d on Hydric S n Concretions	oils List		
Histosol Histic Epipedon Sulfidic Odor	0-18 10YR 2/ Remarks - Edge of	1 (100%) none	Listed Fe/Mi	d on Hydric S n Concretions nic Streaking	oils List s in Sandy	Soils	
Histosol Histic Epipedon Sulfidic Odor Aquic or Peragu	0-18 10YR 2/ Remarks - Edge of	1 (100%) none	Listed Fe/Mi Orgar Mottle	d on Hydric S n Concretions nic Streaking es (Redoximo	oils List s in Sandy orphic Fea	Soils	
Histosol Histic Epipedon Sulfidic Odor Aquic or Peragu Reducing Condi	0-18 10YR 2/ Remarks - Edge of tic Moisture Regime titions	1 (100%) none	Listed Fe/Mi Orgar Mottle	d on Hydric S n Concretions nic Streaking es (Redoximo	oils List s in Sandy orphic Fea	Soils	
Histosol Histic Epipedon Sulfidic Odor Aquic or Peragu Reducing Condi X Gleyed or Low-0	0-18 10YR 2/ Remarks - Edge of tic Moisture Regime tions Chroma Colors	1 (100%) none fill material/slope.	Listed Fe/Mi Orgar Mottle	d on Hydric S n Concretions nic Streaking es (Redoximo	oils List s in Sandy orphic Fea	Soils	
Histosol Histic Epipedon Sulfidic Odor Aquic or Peragu Reducing Condi X Gleyed or Low-0	0-18 10YR 2/ Remarks - Edge of tic Moisture Regime itions Chroma Colors ontent in Surface Laye	1 (100%) none fill material/slope.	Listed Fe/Mi Orgar Mottle	d on Hydric S n Concretions nic Streaking es (Redoximo	oils List s in Sandy orphic Fea	Soils	

Hydric Soils Present? Wetland Hydrology Present?

Remarks

Wetland hydrology criterion is not satisfied. Therefore, the sample plot is not located in a wetland.

Yes

Yes

Х

No

No

Х

Yes <u>No X</u>

					D	ata Plot #:	15C-SP1
					v	/etland:	15C
	WFT	LAND DET	FRMIN	ΔΤΙΟΝ	I		
(N	lodified from: 198					lanual)	
(14)			etianus	5 Denn		lanual)	
Project/Site: ELST Re-delineati	on		Date:	10/31/	2007	Revis	ited 03-11-14
Applicant/Owner: King Count	y		County	: King			
Investigator: Chip Maney			State:	WA			
1987 Method	🖌 1997 W	A St. Method			Comm	unity ID: P	EM/PFO 03-11-14 - PF
Do Normal Circumstances exist	on the site?	Yes X	No			Plot ID: 150	
Is the site significantly disturbed	(Atypical Situation)?	Yes	No	Х	T ICIG I	IOT ID. 100	
Is the area a potential Problem A	, ,	Yes	– No	х			
Remarks (Explain sample locat							
This plot is located 2 feet east of	•	,	d of a lau	rel heda		ide of the rec	alder canony. No acces
to an upland plot exists.	— — — — — — — — — — — — — — — — — — —			ici neug	<i>c, jusi ouis</i>		alder canopy. No acces
	Unnamed S	Stream 5					
VEGETATION (VDominan	t species are checked)						Dbservations lix-femina 10%
Plant Species		% Cov	ver Strat		ndicator		e oligosperma 2%
1. Cardamine oligosperma		trace	<u> </u>		AC	Carex obn	upta 2%
2. Carex obnupta		trace	— <u>H</u>		OBL	Calystegia	sp. 2% elmateia 40%
3. Convolvulus spp. 4. Juncus effusus		trace 10	— <u>–</u>		ACW+	Juncus eff	
5. Lythrum salicaria		10	— <u>-</u>		OBL		alicaria 10%
✓ 6. Phalaris arundinacea		60	Н		ACW		undinacea 60% Il shrub/tree 35%
 7. Rosa nutkana 		35	S		FAC		neniacus 8%
8. Rubus spectabilis		10	S		FAC+		ctabilis 10%
9. Alnus rubra		15	<u>T</u>		FAC	Alnus rubr	a 15% atifolia 10%
Percent of Dominant Species (except FAC-). Include species r morphological adaptations to we	noted (*) as showing	1	00				
				- 4 - 3 -			
,		-		,			an is a sticfied
,		-		,	ophytic veg	etation criteri	on is satisfied.
The percent of dominant species		-		,	ophytic veg	etation criteri	on is satisfied.
The percent of dominant species	that are hydrophytic is	greater than s	50 percei	nt. Hydro			on is satisfied. De in Remarks):
The percent of dominant species	that are hydrophytic is	greater than s	50 percer	nt. Hydro	gy Indicate		
The percent of dominant species HYDROLOGY Recorded Data (Describe in R	e that are hydrophytic is lemarks): Tide Gage	greater than s	50 percer	nt. Hydro Hydrolo ry Indica	gy Indicate		
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or	e that are hydrophytic is lemarks): Tide Gage	greater than s	50 percer	nt. Hydro Hydrolo ry Indica	gy Indicate		pe in Remarks):
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other	e that are hydrophytic is Remarks): Tide Gage	greater than s	50 percer	ht. Hydrolo Hydrolo ry Indica X	gy Indicat itors: nundated Saturated i Water Mark	ors (Descril n Upper 12 ir	pe in Remarks):
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other X No Recorded Dat	e that are hydrophytic is Remarks): Tide Gage	greater than s	50 percer	Hydrolo Hydrolo ry Indica X	gy Indicato tors: nundated Saturated i Water Mark Drift Lines	ors (Descril n Upper 12 ir ks	pe in Remarks):
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other X No Recorded Dat	e that are hydrophytic is Remarks): Tide Gage	greater than s	50 percer	Hydrolo Hydrolo ry Indica X	gy Indicate Itors: Inundated Saturated i Water Mark Drift Lines Sediment E	ors (Descril n Upper 12 ir ks Deposits	be in Remarks): ches
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other X No Recorded Dat	e that are hydrophytic is Remarks): Tide Gage	greater than s	50 percer	Hydrolo Hydrolo ry Indica X	gy Indicate Itors: Inundated Saturated i Water Mark Drift Lines Sediment E	ors (Descril n Upper 12 ir ks	be in Remarks): ches
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other X No Recorded Dat	e that are hydrophytic is Remarks): Tide Gage	greater than s	50 percer Vetland Prima	Hydrolo Hydrolo ry Indica X	gy Indicate Itors: Inundated Saturated i Water Mark Drift Lines Sediment E Drainage P	ors (Descril n Upper 12 ir ks Deposits	be in Remarks): ches etlands
Aerial Photograph Other X No Recorded Dat Field Observations:	s that are hydrophytic is Remarks): Tide Gage n a Available	greater than s	50 percer Vetland Prima	ht. Hydrolo Hydrolo ry Indica X	gy Indicate tors: nundated Saturated i Water Mark Drift Lines Sediment E Drainage P dicators (2	ors (Descril n Upper 12 ir ks Deposits atterns in We or more requ	be in Remarks): ches etlands ired):
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other X No Recorded Dat Field Observations: Depth of Surface Water:	that are hydrophytic is Remarks): Tide Gage n a Available <u>none</u> (in.)	greater than s	50 percer Vetland Prima	ht. Hydrolo Hydrolo ry Indica X	gy Indicate tors: nundated Saturated i Water Mark Drift Lines Sediment E Drainage P dicators (2 Dxidized R	ors (Descril n Upper 12 ir ks Deposits atterns in We or more requ	be in Remarks): ches etlands
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other X No Recorded Dat Field Observations: Depth of Surface Water: Depth to Free Water in Pit:	that are hydrophytic is lemarks): Tide Gage n :a Available <u>none</u> (in.) 9(in.)	greater than s	50 percer Vetland Prima	Hydrolo Hydrolo ry Indica X	gy Indicate Itors: nundated Saturated i Water Marł Drift Lines Sediment I Drainage P dicators (2 Dxidized R Water-Stain	ors (Descril n Upper 12 ir ks Deposits atterns in We or more requ hizospheres i	be in Remarks): ches etlands ired):
The percent of dominant species HYDROLOGY Recorded Data (Describe in R Stream, Lake, or Aerial Photograph Other X No Recorded Dat Field Observations: Depth of Surface Water: Depth to Free Water in Pit:	that are hydrophytic is lemarks): Tide Gage n :a Available <u>none</u> (in.) 9(in.)	greater than s	50 percer Vetland Prima	Hydrolo Hydrolo ry Indica X	gy Indicate Inundated Saturated i Water Mark Drift Lines Sediment [Drainage P dicators (2 Dxidized R Water-Stain Local Soil §	ors (Descril n Upper 12 ir ks Deposits atterns in We or more requ hizospheres i ned Leaves	be in Remarks): ches etlands ired): n Upper 12 inches

03-11-14 Observations - Soil saturated at surface.

Parametrix

								Data Plot	#:	15C-SP1
								Wetland:		15C
Project/Site	: ELST Re-de	lineation				Date:	10/31/2007	F	Revis	ited 03-11-14
SOIL										
Soil Surve	ey Data:									
Map Unit N	Name: Alderv	vood gravelly sandy	loam	6 to 159	% slopes		Drainage Cla	ss: Moderate	ely we	ell drained
							Field Observa	ations Confirn	n Maj	pped Type?
Taxonomy	(Subgroup):	Entic Durochrepts					Yes	No X	NA	
Profile De	scription:									
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		Mottle (Munse	Color ell Moist)		Mottle Abundance/C	Contrast		tture, Concretions, zospheres, etc.
0-17	А	10YR 3/1		none			none		silt l	oam
Hi Hi Su Ac Re X Gi Hi	educing Condit eyed or Low-C gh Organic Co	hroma Colors ntent in Surface La				Fe/M Orga Mottle	d on Hydric Soi n Concretions nic Streaking ir es (Redoximor r (Explain in Re	n Sandy Soils phic Features		
		disturbances, local olor indicates hydri			e.):					
		-	V.		N		1- 11	ie Compline	Dali	et Within e Wetler 20
	tic Vegetation	Present?	Yes	<u> </u>	No _		is ti	us sampling		nt Within a Wetland?
•	ils Present?		Yes	<u>X</u>	No _			Yes X	_ I	No
wetland H	lydrology Pres	sent?	Yes	Х	No					

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Project Site: Applicant/Owner: Investigator: Section, Township, Range: Landform (hillslope, terrace, Subregion (LRR) A Soil Map Unit Name Alderwo Are climatic/hydrologic condi Are "Normal Circumstances" Are Vegetation , Soil, , ,	Sampling Date: 01-30-09 Revisited 09-12-13 Sampling Point: W15D-SP1 City/County: City of Sammamish State: WA Local relief (concave, convex, none) none Long Datum NWI classification PEM (If no, explain in remarks.) (If needed, explain any answers in Remarks.)					-13				
Hydrophytic Vegetation Pro	esent?	Yes 🔲	No Is this S	ations, trans			atures, etc.	□ No		
Hydric Soils Present? Wetland Hydrology Preser	t? ⊠	Yes □ Yes □	No No							
a ditch, app sediment dr	D is located immediately no roximately 6 feet NNE of fla edged). tland criteria are satisfied in	g W15D-20 an	d 2 feet E of split							n of
VEGETATION – Use sci	entific names of plants	s.								
Tree Stratum (Plot size NA)	Absolute % Cover	Dominant Species?	Indicator Status			t Worksheet			
1. 2.							nt Species N, or FAC:	2	((A)
3.					Total Nur	nber of Do	ominant	2	((~)
4.					•	Across All			((B)
Sapling/Shrub Stratum (Pl	– ot size <u>NA</u>)		= Total Cover				nt Species N, or FAC:	100	((A/B)
1.					Prevale		ex Worksheet			
<u>2.</u> 3.					OBL spe	Total % C	Cover of	x 1 =	tiply by	
4.					FACW sp			x 2 =		
5.					FAC spe			x 3 =		
	-		= Total Cover		FACU sp UPL spec			x 4 = x 5 =		
Herb Stratum (Plot size 5 fe	eet, confined to wetland bou	undary)			Column t			(A)	(E	3)
1. Callitriche heterophylla		40	Yes	OBL						,
2. Ranunculus repens		15 10	Yes No	FACW OBL	Preva	lence Ind	dex = B / A =			
 Lemna minor Cardamine oligosperma 		10	No	FAC	Hydron	hutio Vo	getation Indica	toro		
5. Scirpus microcarpus		5	No	OBL	Yes		nce test is > 50%	1015		
6. Nasturtium officinale		2	No	OBL		Prevaler	nce test is ≤ 3.0 *			
7. Phalaris arundinacea		2	No	FACW	_		ogical Adaptations			g
8. 9.							emarks or on a se Non-Vascular Pla)	
10.							atic Hydrophytic V		explain)	
11. 50% = 42; 20% = 16.8		0.4	- Tatal Causa		* In all a a fa	المراجع مع				
Woody Vine Stratum (Plot	- size NA)	84	= Total Cover				ic soil and wetland turbed or problema		ust de	
1.										
2.	-		= Total Cover		Hydroph Present?	ytic Vege	tation Yes		No	
% Bare Ground in Herb Strat	tum <u>30</u>									
<i>Remarks:</i> Hedera helix p vegetation crit	present along boundary edg erion.	e, rooted in ad	jacent upland. 10	00% of the dom	ninant specie	s are hydr	ophytic. This sati	sfies the hydr	ophytic	

Sampling Point W15D-SP1

Profile Descri	iption: (Describe to the o	depth neede	d to document the indicate	tor or confire	n the absence of	of indicato	rs.)				
Depth	Matrix		F	Redox Featur	es						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-18	N 2.5/1	100	-	-	-	-	Loamy sand	Some gravels and cobbles			
18-20	10Y 3/1	100	-	-	-	-	sand	Some gravels and cobbles			
								L			
¹ Type: C=Con ⁴	centration, D=Depletion, F	RM=Reduced	Matrix, CS=Covered or Co	oated Sand G	rains ² Loc: P	L=Pore Lini	ing, M=Matrix				
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) X Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8)											
Restrictive Lay Type: Depth (inches)	ver (if present):):				Hydric soil	present?	Yes	No 🗆			
Remarks:	A thick dark surface satis	fies the hydri	ic soil criterion.								
HYDROLOG	9Y										
Primary Indic Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surfac Inunda	High Water Table (A2) 🔲 Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) 🔲 Drainage Patterns (B10)										
Field Observa Surface Water Water Table P Saturation Pre (includes capil	r Present? X Ye Present? X Ye ssent? Ye llary fringe)	is I N is I N		face	Wetland Hydro	blogy Pres	ent? Yes [No 🗆			
Describe Reco	orded Data (stream gauge	, monitoring	well, aerial photos, previous	s inspections	, if available:						
Remarks:	The presence of surface	water satisfie	es the wetland hydrology cri	iterion.							

										1
Project Site:	ELST – Re-delineatio	n			Sampling	n Date:	01-30-09	Revisited	d 09-12	2-13
Applicant/Owner:	King County				Sampling		W15D-SP2			
Investigator:	M. Maynard; C. Wors				City/Cou		City of Samn	namieh		
Section, Township, Range:	S07, T24N, R06E	ley			State:	nity.	WA	lamish		
Section, Township, Range.	307, 124N, RUOE				Sidle.		VVA			
Landform (hillslope, terrace,	etc) hillslope		Slope (%) 100%			ef (concave	, convex, none) c			
Subregion (LRR) A		Lat			Long		Datun	n		
Soil Map Unit Name Alderwo	od gravelly sandy loam, 6	to 15 percent sl	opes			NWI cla	ssification NA			
Are climatic/hydrologic condi	tions on the site typical for	this time of vea	r? 🛛 Yes	□ No	(If no. exp	lain in rem	arks.)			
Are "Normal Circumstances"		· · · · , · ·	X Yes	D No	х - <i>/</i> - г		/			
Are Vegetation D, Soil, D,										
Are Vegetation □, Soil, □, o	or Hydrology 🗌 naturally p	roblematic? No			(If needed	l, explain a	ny answers in Re	marks.)		
SUMMARY OF FINDING	S – Attach site map s	howing samp	oling point loca	tions, trans	ects, imp	ortant fea	atures, etc.			
Hydrophytic Vegetation Pre	esent?	Yes 🛛	No Is this Sa	mpling Point	within a W	etland?	☐ Yes	🛛 No		
Hydric Soils Present?		Yes 🔲	No							
Wetland Hydrology Presen		Yes 🖾	No							
, , , , , , , , , , , , , , , , , , , ,										
	D is located immediately no						plot is approximat	tely 12 feet no	ortheas	t of
•	W15D-20 on slope with iv	•			wetland sig	n.				
Only one of	the wetland criteria are sat	isfied indicating	this area is not we	etland.						
l										
VEGETATION – Use sci	entific names of plant	s.								
Tree Stratum (Plot size NA)		Absolute %	Dominant	Indicator	Domina	ance Test	Worksheet			
1.		Cover	Species?	Status	Numbor	of Dominar	t Spaciaa	1		
						OBL, FACV		1		<i>(</i>) \
2.						-	-	0		(A)
<u>3.</u> 4.						mber of Do Across All		2		
4.										(B)
	-		= Total Cover			of Dominar		50		
					that are 0	OBL, FACV	v, of FAC:			(A/B)
Sapling/Shrub Stratum (Pl	ot size <u>NA</u>)									
1.					Prevale	nce Inde	x Worksheet			
2.						Total % C	over of		tiply by	
3.					OBL spe			x 1 =		
4. 5.					FACW spe			x 2 = x 3 =		
5.			= Total Cover		FAC Spe			x 3 =		
	-				UPL spe			x 5 =		
Herb Stratum (Plot size 5 fe	eet)				Column t			(A)	(B)
1. Cardamine oligosperma		5	Yes	FAC						
2.					Preva	alence Inc	lex = B / A =			
3.										
4.					Hydrop	hytic Veg	getation Indica	tors		
5.					No	Dominan	ice test is > 50%			
6.							ce test is ≤ 3.0 *			
7.							ogical Adaptations			ng
8.							emarks or on a se)	
<u>9.</u> 10.							Non-Vascular Pla atic Hydrophytic \		ovelaie	\ \
11.						FIUDIEITI		regetation (слріант)
50% = 2.5; 20% = 1		5	= Total Cover		* Indicato	ors of hydri	c soil and wetland	l hydrology m	ust be	
	-						urbed or problem			
Woody Vine Stratum (Plot	size 30 feet, outside wetla	nd boundary)								
1. Hedera helix		80	NA	NL						
2. Rubus armeniacus		2	Yes	FACU		ytic Veget	ation Yes		No	\boxtimes
50% = 1; 20% = 0.4	-	2	= Total Cover		Present	ſ		_		
% Bare Ground in Herb Strat	um									
		drophytic and	wotland bydrology	ie not propert		nhytic yca	otation critorian is	not entiofied	1	
Remarks: Only 50% of the	ne dominant species are hy	anopriyuc, and	weilanu nyurology	is not present	. The hydro	phiyuc veg	etation criterion is	S HUL SALISHED		

Profile Descr	iption: (Describe to the	depth neede	d to document the indic	ator or confi	m the absence	of indicato	rs.)	
Depth	Matrix			Redox Featu			Ľ	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-20	10YR 4/1+	100	7.5YR 5/8	10	С	М	Silt loam and sand loam	Textures are mixed
							<u> </u>	
	ndicators: (Applicable to	all L <u>RRs,</u> u	d Matrix, CS=Covered or (nless otherwise noted.) Sandy Redox (S5)	Coated Sand (Indicat		ing, M=Matrix blematic Hydric \$ 10)	Soils ³
Histic Ep Black His Hydroge Depleted Thick Da	ipedon (A2) stic (A3) n Sulfide (A4) I Below Dark Surface (A1 rk Surface (A12)		Stripped Matrix (S6) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6)		RA 1) R ³ Indica	ed Parent N ther (explain tors of hydro	Naterial (TF2) n in remarks) ophytic vegetation	and wetland hydrology must
	lucky Mineral (S1) leyed Matrix (S4)		Depleted Dark Surface (F7 Redox Depressions (F8)	()	be pres	ent, unless	disturbed or proble	ematic
Restrictive La Type: Depth (inches	yer (if present):				Hydric soil	present?	Yes	No 🗌
Remarks:		%) The pres	ence of a depleted matrix	satisfies the h	vdric soil criterio	<u>ר</u>		
nomano.		, , , , , , , , , , , , , , , , , , ,	ence of a depicted matrix	causiics uic I				
HYDROLOG	BY							
Wetland Hyd Primary India Surfar High Satur. Water Sedin Drift [Algal Iron D Surfar Inund Image	rology Indicators: cators (minimum of one re- ce water (A1) Water Table (A2) ation (A3) Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial ary (B7)		k all that apply): oarsely Vegetated Concav ater-Stained Leaves (exca ater-Stained Leaves (exca att Crust (B11) quatic Invertebrates (B13) ydrogen Sulfide Odor (C1) kidized Rhizospheres alor resence of Reduced Iron (ecent Iron Reduction in Til unted or Stressed Plants ther (explain in remarks)	ept MLRA 1,) ng Living Root C4) lled Soils (C6)	2, 4A & 4B) (B9)		rainage Patterns (ry-Season Water	res (B9) (MLRA 1, 2, 4A & 4B) B10) Table (C2) n Aerial Imagery (C9) n (D2) 3) 55) (D6) (LRR A)
Field Observ Surface Wate Water Table F Saturation Pre (includes capi	r Present? Image: Constraint of the second	es 🛛 M		one	Wetland Hydro	ology Pres	ent? ^{Yes} [No 🛛
Describe Rec	orded Data (stream gauge	e, monitoring	well, aerial photos, previo	us inspections), if available:			
Remarks:	No primary or secondary	v indicators of	wetland hydrology are pr	esent.				

Project Site: Applicant/Owner: Investigator: Section, Township, Range: Landform (hillslope, terrace, of Subregion (LRR) A Soil Map Unit Name Alderwo Are climatic/hydrologic condii Are "Normal Circumstances" Are Vegetation ⊠, Soil, □, of Are Vegetation □, Soil, □, of	od gravelly sandy loam, 6 to tions on the site typical for t present on the site? or Hydrology ☐ significantly or Hydrology ☐ naturally pr	Sampling Date: 01-30-09 Revisited 09-12-13 Sampling Point: W15E-SP1 City/County: City of Sammamish State: WA Local relief (concave, convex, none) none Long Datum NWI classification PEM (If no, explain in remarks.) (If needed, explain any answers in Remarks.)					2-13			
SUMMARY OF FINDING Hydrophytic Vegetation Pre		Yes		itions, trans			atures, etc.	□ No		
Hydric Soils Present? Wetland Hydrology Presen	t?	Yes 🔲 Yes 🗌	No No							
middle of dite	E is located immediately nor ch, east of Douglas-firs on s land criteria are satisfied ind	slope. The dito	th in the wetland is						V15E-7	in
VEGETATION – Use sci	entific names of plants	s.								
Tree Stratum (Plot size <u>NA</u>)		Absolute % Cover	Dominant Species?	Indicator Status			t Worksheet	_		
1. 2.							nt Species W, or FAC:	5		(A)
3.						nber of Do		5		(A)
4.						Across All				(B)
Sapling/Shrub Stratum (Plo	– pt size <u>NA</u>)		= Total Cover				nt Species W, or FAC:	100		(A/B)
1.					Prevale		ex Worksheet			
2. 3.					OBL spec	Total % C	Cover of	x 1 =	tiply by	
4.					FACW spec			x 2 =		
5.					FAC spec	cies		x 3 =		
	-		= Total Cover		FACU sp			x 4 =		
Herb Stratum (Plot size 5 fe	et, confined to wetland bou	indary)			UPL spec Column t			x 5 = (A)	(B)
1. Nasturtium officinale		15	Yes	OBL				(7		_/
2. Equisetum hyemale		15	Yes	FACW	Preva	lence Ind	dex = B / A =			
3. Ranunculus repens		10	Yes	FACW						
 Lemna minor Poa trivialis 		10 10	Yes Yes	OBL FACW	Hydrop Yes		getation Indication Indicatio Indication Indication Indication Indication Indication Ind	tors		
6. Veronica americana		5	No	OBL	165		nce test is ≤ 3.0 *			
7. Holcus lanatus		2	No	FAC			ogical Adaptations			ng
8. 9.							emarks or on a se Non-Vascular Pla)	
9. 10.							atic Hydrophytic V		explain)
11.										
50% = 33.5; 20% = 13.4	—	67	= Total Cover				ic soil and wetland turbed or problema		iust be	
Woody Vine Stratum (Plot 1.	SILC INA)				1					
2.	-		= Total Cover		Hydroph Present?	ytic Vege	tation Yes		No	
% Bare Ground in Herb Strat	um <u>50</u>									
Remarks: 100% of the do	ominant species are hydrop	hytic. This sat	isfies the hydroph	ytic vegetation	criterion.					

Profile Descr	iption: (Describe to the	depth neede	d to document the indi	cator or confirm	n the absence of	of indicato	rs.)	
Depth	Matrix			Redox Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-20	10YR 2/1	100	-	-	-	-	Sandy silt loam	See below
(inches) Color (moist) % Type' Loc' 0-20 10YR 2/1 100 - </td <td></td> <td></td>								
		1				1		
Hydric Soil Ir Histosol Histic Ep Black Hydroge Depletec X Thick Da Sandy M	dicators: (Applicable to (A1) ipedon (A2) stic (A3) n Sulfide (A4) I Below Dark Surface (A1 rk Surface (A12) ucky Mineral (S1)	all LRRs, un	nless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Joamy Mucky Mineral (F Joamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F6)	1) (except MLR 2) 	Indicato A 1)	ors for Prol cm Muck (A ed Parent M ther (explain tors of hydro	blematic Hydric 10) Aaterial (TF2) n in remarks) ophytic vegetation	n and wetland hydrology must
Туре:					Hydric soil	present?	Yes	No 🗆
Remarks:	Decomposing organic m	atter and grav	vel throughout profile. A	thick dark surfa	ce satisfies the h	nydric soil cr	riterion.	
HYDROLOG	SY							
Wetland Hyd Primary India Surfac High V Satura Water Sedin Drift D Algal Iron D Surfac Inund Image	rology Indicators: cators (minimum of one re ce water (A1) Nater Table (A2) ation (A3) Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial ery (B7)		parsely Vegetated Conca ater-Stained Leaves (ex- alt Crust (B11) uatic Invertebrates (B13) vdrogen Sulfide Odor (C kidized Rhizospheres alc esence of Reduced Iron ecent Iron Reduction in T unted or Stressed Plants	cept MLRA 1, 2 3) 1) ong Living Roots (C4) Tilled Soils (C6) 5 (D1) (LRR A)	, 4A & 4B) (B9)		/ater-Stained Lea rainage Patterns ry-Season Water	Table (C2) on Aerial Imagery (C9) on (D2) D3) (D5) s (D6) (LRR A)
Surface Water Water Table F Saturation Pre	r Present? X Oresent? X Osent? X	es 🗖 M	lo Depth (in): N	NA	Wetland Hydro	ology Pres	ent? Yes	No 🗆
Describe Reco	orded Data (stream gaug	e, monitoring	well, aerial photos, previ	ous inspections	, if available:			
Remarks:	The presence of surface	water satisfie	es the wetland hydrology	criterion.				

Project Site:	ELST – Re-delineation	n			Sampling	Date:	01-30-09	Revisite	ed 09-1	2-13
Applicant/Owner:						Point:	W15E-SP2			
Investigator:	M. Maynard; C. Worsley					nty:		City of Sammamish		
Section, Township, Range:	S07, T24N, R06E					ity.	WA			
occuon, rownship, runge.	507, 124N, NOOL			State:						
Landform (hillslope, terrace,	etc) hillslope		Slope (%) 100%		Local relie	f (concave,	, convex, none)	convex		
Subregion (LRR) A		Lat			Long		Datu	m		
Soil Map Unit Name Alderwo	od gravelly sandy loam, 6	to 15 percent sl	opes			NWI cla	ssification NA			
Are climatic/hydrologic condi	tions on the site typical for	this time of yea	r? 🛛 Yes	□ No	(If no eyn	lain in rema	arke)			
Are "Normal Circumstances"		unis unie or yea	Yes		(ii iio, exp		arko.)			
Are Vegetation \Box , Soil, \Box , o		v disturbed? No								
Are Vegetation \Box , Soil, \Box , o					(If needed	, explain ar	ny answers in R	emarks.)		
					-	-	-			
SUMMARY OF FINDING	S – Attach site map sl	howing samp	oling point loca	tions, trans	ects, impo	ortant fea	itures, etc.			
Hydrophytic Vegetation Pre	esent?	Yes 🛛	No Is this Sa	mpling Point	within a W	etland?	Yes	🛛 No		
Hydric Soils Present?		Yes 🛛	No	inping i oni	within a H	otiana :				
Wetland Hydrology Presen		Yes 🛛	No							
Wedding Hydrology Freedon			110							
Remarks: Wetland 15E	E is located immediately no	rth of SE 26th S	Street and west of	the trail. This	paired uplar	nd sample p	plot is approximation	ately 15 feet	SSW of	
wetland flag	W15E-7 on slope under D	ouglas-firs.								
None of the	wetland criteria are satisfie	d indicating this	s area is not wetlar	nd.						
		-								
VEGETATION – Use sci	entific names of plant	s.								
Tree Stratum (Plot size 30 f	eet, outside wetland	Absolute %	Dominant	Indicator	Domina	nce Test	Worksheet			
boundary)	ool, oaloido nolana	Cover	Species?	Status	Domina		WorkSheet			
1. Pseudotsuga menziesii		95	Yes	FACU		of Dominan		0		
2.					that are C	OBL, FACW	V, or FAC:			(A)
3.					Total Nur	nber of Dor	minant	6		()
4.						Across All S				(D)
		95	= Total Cover		Percent	of Dominan	t Spacias	0		(B)
	-	90				BL, FACW		0		
Continent Charter (D	-+ -:					JDL, 17.01				(A/B)
Sapling/Shrub Stratum (Pl	ot size <u>5 teet</u>)									
1. Corylus cornuta		20	Yes	FACU	Prevale		x Worksheet			
2. Arbutus menziesii		5	NA	NL		Total % Co	over of		Itiply by	
3. Gaultheria shallon		5	Yes	FACU	OBL spec			x 1 =		
4. F					FACW sp FAC spec			x 2 = x 3 =		
5. 50% = 12.5; 20% = 5		25	= Total Cover		FAC spec			x 3 =		
12.0, 2070 0	-	20			UPL spec			x 5 =		
Herb Stratum (Plot size 5 fe	eet)				Column t			(A)		(B)
1. Polystichum munitum)	2	Yes	FACU				()		(=)
2.					Preva	lence Ind	ex = B / A =			
3.										
4.					Hydron	hytic Voo	etation Indic	ators		
5.					No		ce test is > 50%	1015		
6.					NU		ce test is ≤ 3.0 *			
7.							gical Adaptation	s * (provide	supporti	na
8.							marks or on a s	NI NI		5
9.							Non-Vascular P		,	
10.						Problema	atic Hydrophytic	Vegetation *	(explain	ı)
11.										
	-	2	= Total Cover				soil and wetlan		nust be	
					present, i	unless distu	urbed or problen	natic		
Woody Vine Stratum (Plot	size 30 feet, outside wetla			54.011	_					
1. Rubus ursinus		15	Yes	FACU	Lludrank		ation			
2. Rubus armeniacus 3. Hedera helix		5	Yes NA	FACU NL	Present?	ytic Vegeta	Yes		No	\boxtimes
50% = 10; 20% = 4		20	= Total Cover	INL	Tresenti					
% Bare Ground in Herb Strat		20								
		butic and bude	is soil and wotland	hudrology or	not procen	t Tho hydr	rophytic vogotot	ion oritorion i	n not	
Remarks: None of the do satisfied.	ominant species are hydrop	nyuc, anu nyur	ic soli and weliand	inyurulugy are	e not presen	. me nyai	opriylic vegetat		STICL	
Sausiicu.										

Profile Descr	iption: (Describe to the	depth neede	d to document the indica	ator or confirm	n the absence of	of indicato	rs.)	
Depth	Matrix			Redox Featur			· · · · · · · · · · · · · · · · · · ·	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-20	10YR 3/2	100	7.5YR 5/8	10	C	М	Gravelly sandy loam	
					<u>^</u>			
¹ Type: C=Cor	centration, D=Depletion,	RM=Reduced	Matrix, CS=Covered or C	oated Sand G	rains ² Loc: P	L=Pore Lini	ing, M=Matrix	
Histosol Histic Ep Black Hi Hydroge Depleted Thick Da Sandy M	ipedon (A2) stic (A3) n Sulfide (A4) d Below Dark Surface (A1 ark Surface (A12) lucky Mineral (S1)		Sandy Redox (S5) Stripped Matrix (S6) .oamy Mucky Mineral (F1) .oamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7)		A 1) 20 3 Indicat	cm Muck (A ed Parent N ther (explain tors of hydro	laterial (TF2) n in remarks)	and wetland hydrology must
	ileyed Matrix (S4) yer (if present):		Redox Depressions (F8)					
Type: Depth (inches					Hydric soil	present?	Yes [No 🛛
Remarks:		es. No hydric	soil indicators are present.					
		2						
HYDROLOG	3Y							
Wetland Hyd Primary Indii Surfa High Satur Watel Sedin Onift Algal Ion L Surfa Inund	rology Indicators: cators (minimum of one re ce water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial ery (B7)	SF W Sa Ac Ac D Hy O O St St	k all that apply): parsely Vegetated Concave ater-Stained Leaves (exce ater-Stained Leaves (exce ater-Stained Leaves (exce ater-Stained Leaves (B13) quatic Invertebrates (B13) vdrogen Sulfide Odor (C1) vidized Rhizospheres along esence of Reduced Iron (C ecent Iron Reduction in Till unted or Stressed Plants (I her (explain in remarks)	g Living Roots 24) ed Soils (C6)	, 4A & 4B) (B9)		rainage Patterns (E ry-Season Water T	es (B9) (MLRA 1, 2, 4A & 4B) 310) (able (C2) (A Aerial Imagery (C9) (D2) 3) (D6) (LRR A)
Surface Wate Water Table F Saturation Pre (includes capi	r Present?	es 🖾 N	lo Depth (in): lo Depth (in): nor lo Depth (in): nor		Wetland Hydro	ology Pres	ent? Yes [No 🛛
Describe Rec	orded Data (stream gaug	e, monitoring	well, aerial photos, previou	is inspections	, if available:			
Remarks:	No primary or secondary	/ indicators of	wetland hydrology are pre	esent.				

Data Plot #: 18C-SP1 18C

Wetland:

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	10/31/20	07 Revisited 03-11-14	
Applicant/Owner: King County		County:	King		
Investigator: Matt Maynard, Chip Maney		State:	WA		
□ 1987 Method	97 WA St. Method			Community ID: PSS	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 18C-SP1	
Is the site significantly disturbed (Atypical Situation	n)? Yes	No	Х		
Is the area a potential Problem Area?	Yes	No	х		
Remarks (Explain sample location, disturbances	, problem areas):				

This sample plot is located approximately 15 feet east of flag 18C-1.

VEGETATION (> Dominant species are checked) **Plant Species** Stratum Indicator % Cover Carex obnupta 5 OBL н 1. Cornus sericea 50 s FACW 2. FACU s Rubus armeniacus trace 3. Fraxinus latifolia 35 FACW 4 4. 100

Percent of **Dominant Species** that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: none (in.) Depth to Free Water in Pit: 11 (in.) Depth to Saturated Soil: 6 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): Saturation in the upper 12 inches satisfies wetland hydrology criterion.

03-11-14 Observations - Inundation at 8 inches above the surface.

Parametrix

						Wetland: ass: <u>Well drai</u> vations Confirm No <u>X</u> /Contrast	#: <u>18C-SP</u>	1
						Wetland:	18C	
						Rease: Well draine ations Confirm No <u>X</u> Contrast nent ils List n Sandy Soils phic Features)		
Project/Site	e: ELST Re-de	elineation		Date:	10/31/2007	F	Revisited 03-11	-14
SOIL Soil Surv	ey Data:							
Map Unit	Name: Mixed	Alluvial Land			Drainage Cl	ass: Well drair	ned to very poo	orly drained
					Field Obser	vations Confirm	n Mapped Type	ə?
Taxonomy	(Subgroup):	N/A			Yes	No X	NA	
Profile De	escription:							
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Mois	st)	Mottle Abundance/	Contrast	Texture, Con Rhizospheres	
0-6	A	10YR 3/1	none		none		silt loam	
6-12	A2	10YR 3/1	2.5Y 6/6		few, fine, prom	inent	gravelly silt loa	m
12-18	В	10YR 4/1	none		none		gravelly sandy	loam
Hydric So	oil Indicators:							
н	istosol		-	Liste	d on Hydric S	oils List		
Н	istic Epipedon		_	Fe/M	In Concretions	3		
S	ulfidic Odor		_		-	in Sandy Soils		
		c Moisture Regime	_			-)	
	educing Condit		_	Othe	r (Explain in F	lemarks)		
	leyed or Low-C							
н	igh Organic Co	ntent in Surface Layer						
'''		disturbances, local var	iations, etc.):					
Remarks		imorphic features indic	ate hvdric soils.					

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 18C-SP2

Wetland:

Upland near 18C

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site:	ELST Re-delineation				Date:	10/3	31/200	07	Revisited 03-11-14	
Applicant/Ow	ner: King County				County:	: K	ling			
Investigator:	Matt Maynard, Erik Christe	nsen			State:	V	/A			
1987 Meth	od	🖌 1997 WA	St. Met	hod				Community I	D: Upland shrub	
Do Normal Ci	rcumstances exist on the site	ə?	Yes	Х	No		_	Field Plot ID:	18C-SP2	
Is the site sign	nificantly disturbed (Atypical	Situation)?	Yes		No	Х	_			
Is the area a p	ootential Problem Area?		Yes		No	Х				
Remarks (E	plain sample location, distu	rbances, proble	em area	s):						
This sample p	lot is located approximately	10 feet south o	f flag 18	-						

VE	GE	TATION (Dominant species are checked)				03-11-14 Observations
		Plant Species	% Cover	Stratum	Indicator	Polystichum munitum 2%
	1.	Polystichum munitum	trace	н	FACU	Corylus cornuta 75% Gaultheria shallon 2%
~	2.	Corylus cornuta	75	S	FACU	Rubus armeniacus 45%
	З.	Gaultheria shallon	trace	S	FACU	Rubus laciniatus 2%
~	4.	Rubus armeniacus	45	S	FACU	Acer macrophyllum 25%
	5.	Rubus laciniatus	trace	S	FACU+	
~	6.	Alnus rubra	25	Т	FAC	
Pe	rcent					

morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)	Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrol	o

No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

Parametrix

							Data Plot	#: <u>18C-SP2</u>	Upland near 18C	
							Wetland: Re ass: Well drained vations Confirm N No X No X Contrast F Solis List n Sandy Soils	Upland near		
roject/Site	e: ELST Re-de	elineation			Date:	10/31/2007	R	Revisited 03-11-14		
SOIL Soil Surv	ey Data:									
Map Unit I	Name: Mixed	Alluvial Land				Drainage Cla	ass: Well drain	ed to very poorly dra	ained	
						Field Observ	ations Confirm	Mapped Type?		
Taxonomy	y (Subgroup):	N/A				Yes	No X	NA		
Profile De	escription:									
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		ottle Color lunsell Moist	t)	Mottle Abundance/0	Contrast	Texture, Concretion Rhizospheres, etc.	ıs,	
0-5	Α	10YR 2/1	no	ne		none		sandy loam		
5-17	В	2.5Y 4/2	no	ne		none		sandy loam		
H H SI AI R G H	educing Condit ileyed or Low-C igh Organic Co	Chroma Colors Intent in Surface La	lyer		Fe/M Orga Mottl	d on Hydric Sc In Concretions nic Streaking i es (Redoximor r (Explain in Re	n Sandy Soils phic Features)			
	(Describe soil soil indicators	disturbances, loca are present.	variation	s, etc.):						
WETLA		MINATION								
Hydrophy	tic Vegetation	Present?	Yes	No	x	ls t	his Sampling	Point Within a Wet	tland?	
			_							
Hydric So	oils Present?		Yes	No	X		Yes	No X		

Remarks

Wetland vegetation, hydrology, and soil criteria are not met. Therefore, the sample plot is not located in a wetland.

				Data Plot	#: 19A-SP1
				Wetland:	19A
WET	LAND DET	ERMINA	ATION		
(Modified from: 19	87 ACOE W	etlands	Deline	ation Manual)	
Project/Site: ELST Re-delineation		Date:	11/1/200	7 F	evisited 09-12-13
Applicant/Owner: King County		County:	: King		
Investigator: Chip Maney, Chrissy Bailey		State:	WA		
□ 1987 Method	A St. Method			Community ID:	PEM
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID:19	A-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes	No	X		-
Is the area a potential Problem Area?	Yes	No	х		
Remarks (Explain sample location, disturbances, pro	blem areas):	_			

This sample plot is located 1 foot north of the stairway up to the lawn in a ditch even with the split fence post. It is thin and narrow. New gravel has recently been placed for fill for the stairs.

VEGETATION (> Dominant species are checked)								
		Plant Species	% Cover	Stratum	Indicator			
~	1.	Juncus effusus	30	н	FACW+			
	2.	Lotus corniculatus	trace	Н	FAC			
~	3.	mowed lawn	30	Н				
~	4.	Phalaris arundinacea	20	Н	FACW			
	5.	Polystichum munitum	trace	Н	FACU			
~	6.	Gaultheria shallon	30	S	FACU			
	7.	llex aquifolium	trace	S	NL			
	8.	Rubus armeniacus	10	S	FACU			
	9.	Fraxinus latifolia	10	Т	FACW			
-	cent	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing	C 67					

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):					
Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available Field Observations:	Primary Indicators: X Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands					
Depth of Surface Water: 4.5 (in.) Depth to Free Water in Pit: na (in.) Depth to Saturated Soil: surface (in.) Remarks (As relevant, describe recent precipitation, hydrolo Inundation to a depth of 4.5 inches satisfies wetland hydrology						

09-12-13 Observations - Saturated at 6 inches below surface. Free water in pit at 11 inches below surface.

								Data Plot #	: 19	A-SP1
								Wetland:	19	A
roject/Site	e: ELST Re-d	elineation				Date:	11/1/2007	Re	evisited	09-12-13
SOIL Soil Surve	ey Data:									
Map Unit I	Name: Alder	wood gravelly sar	dy loam 6	6 to 15 %	slopes		Drainage Clas	s: moderately	well di	rained
					•			tions Confirm		
Taxanamu	(Subaroup):	Ductic Durachro	ata				Voo			
-	(Subgroup):	Dystic Durochre	515				Yes	No <u>X</u>	NA _	
Profile De Depth	escription: Horizon	Matrix Color	N	Nottle Co	lor		Mottle	-	Toytura	, Concretions,
(Inches)	Designation	(Munsell Moist)		Munsell N			Abundance/C			pheres, etc.
0-19	A	6/5 BG	7	'.5YR 5/8			many, coarse, pr	ominent	silt loam	
Hydric So	oil Indicators:		a tions - YR 3/1 (1 Y 4/1 (98		one 5Y 5/6	non 2%	e silt lo silt lo	-		
Hi	istosol					Listeo	d on Hydric Soil	s List		
Hi	istic Epipedon						n Concretions			
	ulfidic Odor						nic Streaking in	-		
		ic Moisture Regim	е		X		es (Redoximorp			
	educing Condi					Other	(Explain in Rei	marks)		
	-	Chroma Colors ontent in Surface L	aver							
			-							
		disturbances, loc		. ,						
aleyea 30				10 30113.						
WETLA	ND DETER	MINATION								
	tic Vegetatior		Yes	х	No		ls th	is Sampling F	Point W	/ithin a Wetland?
	ils Present?		Yes		No –					
,			100					Yes X	No	

....

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes <u>X</u> No

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

Project Site:	<u>ELST - S</u>	South S	Sammamish Seg	ment		Ci	ty/County:	Sam	mamis	sh/King	Sampling Da	ate:	<u>03-</u> 1	<u>1-14</u>	
Applicant/Owner:	King Cou	unty								State: WA	Sampling Po	oint:	<u>W19</u> (rev	<u>) B-SP</u>	<u>1</u>
Investigator(s):	C. Worsl	ey; M.	Maynard					Se	ection,	Township, Rang	ge: <u>S06, T2</u>	4N, R06E			
Landform (hillslope, te	rrace, etc.): <u>s</u>	<u>Slope</u>			Local relie	ef (concave	, conve	x, non	e): <u>none</u>		Slope	ə (%):	<u>8%</u>	
Subregion (LRR):	<u>A</u>			La	at:			Long:		_	I	Datum: _			
Soil Map Unit Name:	Alderwo	ood gra	avelly sandy loai	m, 15 i	to 30% slopes					NWI clas	sification:	PSS/PE	M edg	e	
Are climatic / hydrolog	ic conditio	ns on	the site typical fo	or this	time of year?	Yes	\boxtimes	No		(If no, explain i	n Remarks.)				
Are Vegetation	, Soil	□,	or Hydrology	□,	significantly dis	turbed?	Are "Nor	mal Cir	cumst	ances" present?	•	Yes	\boxtimes	No	
Are Vegetation	, Soil	□,	or Hydrology	□,	naturally proble	ematic?	(If neede	ed, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	\boxtimes	No No No		Is the Sampled Area within a Wetland?	Yes		No	
Remarks: Sample plot is located at maintained lawn / Himalayan blackberry edge, approximately 30 feet north of south structure in wetland. The old sample plot location has been filled, landscaped, and terraced. Data from this revised sample plot replaces data previously collected from the old									

sample plot.

VEGETATION – Use scientific names of plants Tree Stratum (Plot aire: NA) Absolute Dominant Ind

Tree Stratum (Plot size: NA)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksheet:		
1				Number of Dominant Species	<u>1</u>	(A)
2				That Are OBL, FACW, or FAC:	_	
3				Total Number of Dominant Species Across All Strata:	<u>2</u>	(B)
4				Species Across Air Strata.		
50% =, 20% =		= Total Cove	r	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u>	(A/B)
Sapling/Shrub Stratum (Plot size: NA)						
1				Prevalence Index worksheet:		
2				<u>Total % Cover of:</u>	Multiply by:	
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =		= Total Cove	r	FACU species	x4 =	
Herb Stratum (Plot size: 3 feet)				UPL species	x5 =	
1. <u>maintained lawn</u>	<u>50</u>	yes	<u>-</u>	Column Totals: (A)		(B)
2. <u>Calystegia sepium</u>	<u>30</u>	<u>yes</u>	FAC	Prevalence Index = B/A	. =	
3.				Hydrophytic Vegetation Indicators:		
J				nyaropnyar regetation material		
4				1 – Rapid Test for Hydrophytic Veget	tation	
			_		tation	
4				1 – Rapid Test for Hydrophytic Veget	tation	
4 5				 1 – Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is <3.0¹ 4 - Morphological Adaptations¹ (Provi 	ide supporting	
4 5 6		 		 ☐ 1 – Rapid Test for Hydrophytic Veget ☐ 2 - Dominance Test is >50% ☐ 3 - Prevalence Index is ≤3.0¹ 	ide supporting	
4 5 6 7				 1 – Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is <3.0¹ 4 - Morphological Adaptations¹ (Provi 	ide supporting	
4. 5. 6. 7. 8.				 1 – Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is <3.01 4 - Morphological Adaptations1 (Providata in Remarks or on a separate 	ide supporting sheet)	
4. 5. 6. 7. 8. 9.				 1 – Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 4 - Morphological Adaptations1 (Providata in Remarks or on a separate 5 - Wetland Non-Vascular Plants1 Problematic Hydrophytic Vegetation1 	ide supporting sheet) (Explain)	
4. 5. 6. 7. 8. 9. 10.	 80			 1 - Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Providata in Remarks or on a separate 5 - Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ ¹Indicators of hydric soil and wetland hydro 	ide supporting sheet) (Explain) ology must	
4. 5. 6. 7. 8. 9. 10. 11.		 = Total Cove		 1 – Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 4 - Morphological Adaptations1 (Providata in Remarks or on a separate 5 - Wetland Non-Vascular Plants1 Problematic Hydrophytic Vegetation1 	ide supporting sheet) (Explain) ology must	
4 5 6 7 8 9 10 11 50% = <u>40</u> , 20% = <u>16</u>	 80 50			 1 - Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Providata in Remarks or on a separate 5 - Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ ¹Indicators of hydric soil and wetland hydrobe present, unless disturbed or problematic 	ide supporting sheet) (Explain) ology must	
4 5 6 7 8 9 10 11 50% = <u>40</u> , 20% = <u>16</u> <u>Woody Vine Stratum</u> (Plot size: <u>10 feet</u>)				 1 - Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 4 - Morphological Adaptations1 (Providata in Remarks or on a separate 5 - Wetland Non-Vascular Plants1 Problematic Hydrophytic Vegetation1 ¹Indicators of hydric soil and wetland hydrobe present, unless disturbed or problematic 	ide supporting sheet) (Explain) ology must c.	
 4 5 6 7 8 9 10 11 50% = 40, 20% = 16 Woody Vine Stratum (Plot size: 10 feet) 1. <u>Rubus armeniacus</u> 			FACU	 1 - Rapid Test for Hydrophytic Veget 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 4 - Morphological Adaptations1 (Providata in Remarks or on a separate 5 - Wetland Non-Vascular Plants1 Problematic Hydrophytic Vegetation1 ¹Indicators of hydric soil and wetland hydrobe present, unless disturbed or problematic 	ide supporting sheet) (Explain) ology must	
 4 5 6 7 8 9 10 10 11 50% = 40, 20% = 16 Woody Vine Stratum (Plot size: 10 feet) 1. <u>Rubus armeniacus</u> 2 	<u>50</u>	<u>yes</u>	FACU	□ 1 - Rapid Test for Hydrophytic Veget □ 2 - Dominance Test is >50% □ 3 - Prevalence Index is ≤3.01 □ 4 - Morphological Adaptations1 (Providata in Remarks or on a separate □ 5 - Wetland Non-Vascular Plants1 □ Problematic Hydrophytic Vegetation1 ¹Indicators of hydric soil and wetland hydrobe present, unless disturbed or problematic Hydrophytic Vegetation Yes	ide supporting sheet) (Explain) ology must c.	

presence of wetland hyodrology and hydric soils.

Project Site: ELST - South Sammamish

SOIL

SOIL										Sampling	g Point: <u>W1</u>	<u>9B-SP1</u>	<u>(rev)</u>	
Profile Des	cription: (Describe to	the depth	n needed to d	ocument	the indicat	or or conf	irm the absend	ce of indi	icato	ors.)				
Depth	Matrix				Redox Fea	atures								
(inches)	Color (moist)	%	Color (mo	oist)	%	Type ¹	Loc ²	Tex	ture			Remark	S	
<u>0-14</u>	10YR 2/1	100	-		<u>-</u>	<u>-</u>		<u>gr s</u>	a loa	<u>m</u>				
<u>14-19</u>	<u>10YR 4/1</u>	<u>90</u>	<u>10YR 5/</u>	<u>8</u>	<u>10</u>	<u>C</u>	M	<u>gr cla</u>	ay loa	am				
¹ Type: C= C	oncentration, D=Depl	etion, RM=	Reduced Matr	ix, CS=Co	overed or C	oated Sand	d Grains. ² l	Location:	PL=	Pore Lining,	M=Matrix			
Hydric Soil	Indicators: (Applical	ble to all L	RRs, unless o	otherwise	e noted.)			I	ndic	ators for Pro	oblematic I	Hydric S	Soils ³ :	
Histos	ol (A1)			Sandy F	Redox (S5)			[2 cm Muck	(A10)			
Histic	Epipedon (A2)			Stripped	d Matrix (S6)		[Red Paren	t Material (TF2)		
Black	Histic (A3)			Loamy	Mucky Mine	ral (F1) (e x	(cept MLRA 1)	[Very Shallo	ow Dark Su	rface (T	F12)	
Hydro	gen Sulfide (A4)			Loamy	Gleyed Mat	rix (F2)		[Other (Exp	lain in Rem	arks)		
Deplet	ted Below Dark Surfac	ce (A11)		Deplete	d Matrix (F3	3)								
I Thick	Dark Surface (A12)			Redox [Dark Surfac	e (F6)								
□ Sandy	Mucky Mineral (S1)			Deplete	d Dark Surf	ace (F7)		3		ators of hydr				
Sandy	Gleyed Matrix (S4)			Redox [Depressions	s (F8)				less disturbe			ιι,	
Restrictive	Layer (if present):													
Type:														
Depth (inche	es):						Hydric Soils	Present	?		Yes	\boxtimes	No	
Remarks:														
Hydric Soil Histos Histos Black Hydro Deplei Thick Sandy Sandy Restrictive Type: Depth (incher	Indicators: (Applicat Indicators: (Applicat Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfac Dark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Layer (if present):	ble to all L	RRs, unless o	otherwise Sandy F Stripped Loamy C Deplete Redox I Deplete	e noted.) Redox (S5) d Matrix (S6 Mucky Mine Gleyed Matri d Matrix (F3 Dark Surfac ed Dark Surfac) rral (F1) (e x rix (F2) 3) e (F6) ace (F7)	ccept MLRA 1)	 [[3	ndic	ators for Pro 2 cm Muck Red Paren Very Shallo Other (Exp eators of hydre	oblematic I (A10) t Material (ow Dark Su lain in Rem ophytic veg ogy must b od or proble	TF2) rface (T larks) jetation a presen matic.	F12) and t,	

HYDROLOGY

Wetl	Wetland Hydrology Indicators:													
Prim	ary Indicators (minimum	of one re	equired	; check	all that	apply)			Sec	ondary Indicators (2 or	more requir	ed)		
	Surface Water (A1)					Water-Stained Leave	s (B9)			Water-Stained Leaves	s (B9)			
\boxtimes	High Water Table (A2)				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)			Drainage Patterns (B10)					
	Water Marks (B1)					Aquatic Invertebrates	; (B13)			Dry-Season Water Ta	able (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Od	or (C1)			Saturation Visible on	Aerial Imag	ery (CS	9)	
	Drift Deposits (B3)							s (C3)		Geomorphic Position	(D2)			
										Shallow Aquitard (D3))			
										FAC-Neutral Test (D5	5)			
									Raised Ant Mounds (D6) (LRR A)					
	Inundation Visible on	Aerial Im	agery (I	37)		Other (Explain in Ren	narks)			Frost-Heave Hummod	cks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>3</u>							
	ration Present? Ides capillary fringe)	Yes		No		Depth (inches):	surface	Wetlar	nd Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ge, moi	nitoring	well, a	erial photos, previous i	nspections), if availat	ble:						
Rem	arks:													

Data Plot #: 19B-SP2

Wetland:

Upland near 19B

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	10/31/20	07	Revisited 03-11-14		
Applicant/Owner: King County		County:	King C	County			
Investigator: Michael Muscari/Laura Brock		State:	WA				
□ 1987 Method	7 WA St. Method			Community II	D: Upland Shrub		
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID:	19B-SP2		
Is the site significantly disturbed (Atypical Situation)? Yes	No	Х				
Is the area a potential Problem Area?	Yes	No	х				
Remarks (Explain sample location, disturbances, problem areas):							

This sample plot is located approximately 10' south of flag 19B-8.

VE	GE	TATION (VDominant species are checked)				03-11-14 Observations
		Plant Species	% Cover	Stratum	Indicator	Calystegia sepium 50%
	1.	Equisetum telmateia	trace	Herb	FACW	Corylus cornuta 20% - Gaultheria shallon 35%
~	2.	Hedera helix	100	Herb	NL	Oemleria cerasiformis 5%
	З.	Polystichum munitum	5	Herb	FACU	Rubus armeniacus 80%
~	4.	Rubus armeniacus	40	Shrub	FACU	Sambucus racemosa 2%
	5.	Symphoricarpos albus	15	Shrub	FACU	
_		of Demains and One size that are ODI FACIAL are				

0

Percent of **Dominant Species** that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

Rubus armeniacus and English Ivy are dominant. The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Re	emarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Aerial Photograph Other X No Recorded Data		Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines
Field Observations:		Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) none (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describ	e recent precipitation, hydro	ologic modifications, local variations, etc.):

Soils dry to 14". No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

ect/Site: <u>ELST Re-delineation</u> Da DIL il Survey Data: p Unit Name: <u>Alderwood gravelly sandy loam, 15 to 30 % slopes</u> konomy (Subgroup): <u>Dystic Durochrepts</u> ofile Description: pth Horizon Matrix Color Mottle Color (Munsell Moist) Mottle Color (Munsell Moist) 4+ A 10YR 2/2 none	Field Obs	Class: Modera	Revisited 03-11-14 ately well drained irm Mapped Type?
DIL il Survey Data: p Unit Name: Alderwood gravelly sandy loam, 15 to 30 % slopes xonomy (Subgroup): Dystic Durochrepts offile Description: pth Horizon pth Horizon Matrix Color Mottle Color ches) Designation	Drainage Field Obs Yes Mottle Abundan	Class: <u>Modera</u> servations Confi No <u>X</u>	ately well drained irm Mapped Type? NA Texture, Concretions, Rhizospheres, etc.
DIL il Survey Data: p Unit Name: Alderwood gravelly sandy loam, 15 to 30 % slopes xonomy (Subgroup): Dystic Durochrepts offile Description: pth Horizon pth Horizon Matrix Color Mottle Color ches) Designation	Drainage Field Obs Yes Mottle Abundan	Class: <u>Modera</u> servations Confi No <u>X</u>	ately well drained irm Mapped Type? NA Texture, Concretions, Rhizospheres, etc.
DIL il Survey Data: p Unit Name: Alderwood gravelly sandy loam, 15 to 30 % slopes xonomy (Subgroup): Dystic Durochrepts offile Description: pth Horizon pth Horizon Matrix Color Mottle Color ches) Designation	Drainage Field Obs Yes Mottle Abundan	Class: <u>Modera</u> servations Confi No <u>X</u>	ately well drained irm Mapped Type? NA Texture, Concretions, Rhizospheres, etc.
il Survey Data: p Unit Name: Alderwood gravelly sandy loam, 15 to 30 % slopes konomy (Subgroup): Dystic Durochrepts ofile Description: pth Horizon Matrix Color Mottle Color ches) Designation (Munsell Moist) (Munsell Moist)	Field Obs Yes Mottle Abundan	servations Confi	irm Mapped Type? NA Texture, Concretions, Rhizospheres, etc.
xonomy (Subgroup): Dystic Durochrepts ofile Description: pth Horizon Matrix Color Mottle Color ches) Designation (Munsell Moist) (Munsell Moist)	Field Obs Yes Mottle Abundan	servations Confi	irm Mapped Type? NA Texture, Concretions, Rhizospheres, etc.
ofile Description:pthHorizonMatrix ColorMottle Colorches)Designation(Munsell Moist)(Munsell Moist)	Yes Mottle Abundan	NoX	NA Texture, Concretions, Rhizospheres, etc.
ofile Description:pthHorizonMatrix ColorMottle Colorches)Designation(Munsell Moist)(Munsell Moist)	Mottle Abundan		Texture, Concretions, Rhizospheres, etc.
ofile Description:pthHorizonMatrix ColorMottle Colorches)Designation(Munsell Moist)(Munsell Moist)	Abundan	ce/Contrast	Rhizospheres, etc.
pth Horizon Matrix Color Mottle Color ches) Designation (Munsell Moist) (Munsell Moist)	Abundan	ce/Contrast	Rhizospheres, etc.
4+ A 10YR 2/2 none	none		loam
Histic Epipedon F Sulfidic Odor C Aquic or Peraguic Moisture Regime M	-	ons ng in Sandy Soi morphic Feature	
hydric soil indicators are present. Hydric soil criterion is not satisfied.			
		le this Samplin	ng Point Within a Watla
drophytic Vegetation Present? Yes No X	-	is uns samplir	ng Point Within a Wetla
dric Soils Present? Yes No X tland Hydrology Present? Yes No X	_	Yes	No X

Remarks

Hydrophytic vegetation, hydric soil, and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

				Data Plot #:	20A-SP1
				Wetland:	20A
WETLA	ND DETI	ERMIN		l	
(Modified from: 1987 A		etlands	Delin	eation Manual)	
		onanao	Donn		
Project/Site: ELST Re-delineation		Date:	11/1/20	007 Rev	visited 09-12-13
Applicant/Owner: King County		County	: King		
Investigator: Chrissy Bailey		State:	WA		
□ 1987 Method	t. Method			Community ID:	PEM
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 20	A-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х		
Is the area a potential Problem Area?	Yes	No	Х		
Remarks (Explain sample location, disturbances, problem	n areas):	-			
This sample plot is located approximately 2 feet east of the	edge of the	e trail just	t east of	the edge of the ditch,	approximately 150 feet
south of the driveway crossing, across from the 3rd garage					
VEGETATION (Dominant species are checked)					
Plant Species	% Cov	er Strat	um I	ndicator	
1 _ Epilobium ciliatum	trace	<u>H</u>	F	ACW-	
2. Equisetum arvense	10	H		AC	
✓ 3 Phalaris arundinacea	90	<u> </u>		ACW	
4. Rubus armeniacus	5	S	!	ACU	
Percent of Dominant Species that are OBL, FACW, or l (except FAC-). Include species noted (*) as showing		00			
morphological adaptations to wetlands. "T" indicates trace.		00			
Remarks (Describe disturbances, relevant local variations	s. seasonal	effects.	etc.):		
The percent of dominant species that are hydrophytic is greater	-	-	,	phytic vegetation crite	erion is satisfied.
		,	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
HYDROLOGY					
Recorded Data (Describe in Remarks):	v		-	gy Indicators (Desc	ribe in Remarks):
Stream, Lake, or Tide Gage		Primar	y Indica	tors:	
Aerial Photograph				nundated	
Other				Saturated in Upper 12	inches
X No Recorded Data Available				Vater Marks Drift Lines	
Field Observations:				Sediment Deposits	
				Drainage Patterns in V	Vetlands
			'		- offerido
Depth of Surface Water: <u>none</u> (in.)		Secon	dary In	dicators (2 or more ree	quired):
Depth to Free Water in Pit: none (in.)			(Oxidized Rhizospheres	s in Upper 12 inches
Depth to Saturated Soil: <u>5</u> (in.)			١	Nater-Stained Leaves	

Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *Saturation in the upper 12 inches satisfies wetland hydrology criterion.*

09-12-13 Observations - Saturated at 3 inches below surface.

								Data Plo Wetland		20A-SP1 20A
roject/Site	e: <u>ELST Re-de</u>	elineation				Date:	11/1/2007	7	Revis	sited 09-12-13
SOIL Soil Surv	ey Data:									
		vood gravelly sandy lo	bam 6	to 159	% slopes		Drainage	Class: Modera	tely w	ell drained
·								ervations Confi		
Taxonom	(Subgroup):	Entic Durochrepts					Yes	No X	NA	
	-	Entic Durochiepts					163		_ 11/	
Depth (Inches)	escription: Horizon Designation	Matrix Color (Munsell Moist)		lottle Nunse	Color ell Moist)		Mottle Abundanc	e/Contrast		xture, Concretions, izospheres, etc.
0-6	Α	10YR 3/1	no	one			none		silt	loam
6-18	A2	10YR 3/1	no	one			none		gra	velly sandy loam
H H Si Ai Ai Ai R H Remarks	educing Condit leyed or Low-C igh Organic Co	hroma Colors ntent in Surface Laye disturbances, local va		ns, etc	 	Fe/M Orga Mottl		ns ig in Sandy Soi norphic Feature		
	son marcale nj									
WETLA	ND DETER	MINATION								
Hydrophy	tic Vegetation	Present?	Yes	х	No		I	s this Samplir	ng Poi	nt Within a Wetland?
Hydric So	oils Present?		Yes	Х	No			Yes	x	No
								103		

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes X No

Data Plot #: 20A-SP2

Wetland:

Upland near 20A

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/1/200	Revisited 09-12-13
Applicant/Owner: King County		County:	King	
Investigator: Matt Maynard, Chrissy Bailey		State:	WA	
□ 1987 Method	A St. Metho	d		Community ID: Upland Shrub
Do Normal Circumstances exist on the site?	Yes	X No		Field Plot ID: 20A-SP2
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	Х	
/				

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 20 feet northeast of flag 20A-13.

VE	GEI	FATION (Common species are checked) Plant Species	Indicator	09-11-13 Observations Phalaris arundinacea 10% Rubus armeniacus 70%						
	1.	Phalaris arundinacea	10	Н	FACW	Robinia pseudoacacia 90%				
~	2.	Rubus armeniacus	70	S	FACU	Rubus ursinus 15%				
~	3.	Gleditsia triacanthos	45	Т	NO					
(ex	Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing 0 morphological adaptations to wetlands. "T" indicates trace.									
		s (Describe disturbances, relevant local variations, se cent of dominant species that are hydrophytic is not gre		. ,	Hydrophytic	vegetation criterion is not satisfied.				

HYDROLOGY

Recorded Data (Describe in Re	marks):	Wetland Hydrology Indicators (Describe in Remarks):							
Stream, Lake, or T	ïde Gage	Primary Indicators:							
Aerial Photograph Other X No Recorded Data	Available	Inundated Saturated in Upper 12 inches Water Marks							
Field Observations:		Drift Lines Sediment Deposits Drainage Patterns in Wetlands							
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) none (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)							
Remarks (As relevant, describe	e recent precipitation, hydro	ologic modifications, local variations, etc.):							

No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

							Data Plot	#:	20A-SP2
							Wetland:		Upland near 20A
Project/Site	ELST Re-de	lineation			Date:	11/1/2007	F	Revisite	ed 09-12-13
SOIL									
Soil Surve	ey Data:								
Map Unit I	Name: Alderv	ood gravelly sand	dy loam 6 t	to 15% slope	S	Drainage Cla	ass: Moderate	ely well	drained
						Field Observ	ations Confirm	n Mapp	ped Type?
Taxonomy	(Subgroup):	Entic Durochrept	s			Yes	No X	NA	
-	scription:		-				<u></u>		
Depth	Horizon	Matrix Color	М	ottle Color		Mottle		Textu	ure, Concretions,
(Inches)	Designation	(Munsell Moist)		/unsell Moist)	Abundance/	Contrast		ospheres, etc.
0-7	A	10YR 3/3	nc	one		none		sandy	/ loam
0-7 7-18	A B	10YR 3/3 10YR 4/2		one		none		·	/ loam / loam
7-18 Hydric So Hi Hi Su Au Ru Gi Hi Remarks	B il Indicators: stosol stic Epipedon ulfidic Odor quic or Peragui educing Condit eyed or Low-C gh Organic Co (Describe soil	10YR 4/2 c Moisture Regim ions hroma Colors ntent in Surface L disturbances, loca	e ayer al variation	one 	Fe/M Orga Motti Othe	-	n Sandy Soils phic Features	sandy	
7-18 Hydric So Hi Hi Su Au Ru Gi Hi Remarks	B il Indicators: stosol stic Epipedon ulfidic Odor quic or Peragui educing Condit eyed or Low-C gh Organic Co (Describe soil	10YR 4/2 c Moisture Regim ions hroma Colors ntent in Surface L	e ayer al variation	one 	Fe/M Orga Motti Othe	d on Hydric So In Concretions Inic Streaking i les (Redoximo	n Sandy Soils phic Features	sandy	
7-18 Hydric So Hi Hi Su Ad Ru Ru Ru Ru Ru No hydric	B il Indicators: stosol stic Epipedon ulfidic Odor quic or Peragui educing Condit eyed or Low-C gh Organic Co (Describe soil	10YR 4/2 c Moisture Regim ions hroma Colors ntent in Surface L disturbances, loca are present. Hydri	e ayer al variation	one 	Fe/M Orga Motti Othe	d on Hydric So In Concretions Inic Streaking i les (Redoximo	n Sandy Soils phic Features	sandy	
7-18 Hydric So Hi Hi Su Ad Ad Remarks No hydric WETLA	B il Indicators: stosol stic Epipedon ulfidic Odor quic or Peragui educing Condit leyed or Low-C gh Organic Co (Describe soil <i>soil indicators</i> of	10YR 4/2 c Moisture Regim ions hroma Colors ntent in Surface L disturbances, loca are present. Hydri MINATION	e ayer al variation	one 	Fe/M Orga Motti Othe	none d on Hydric So In Concretions unic Streaking i les (Redoximo er (Explain in R	n Sandy Soils phic Features emarks)	sandy	
7-18 Hydric So Hi Hi Su Su Ad Remarks No hydric WETLA Hydrophy	B il Indicators: stosol stic Epipedon ulfidic Odor quic or Peragui educing Condit leyed or Low-C gh Organic Co (Describe soil soil indicators of ND DETERI	10YR 4/2 c Moisture Regim ions hroma Colors ntent in Surface L disturbances, loca are present. Hydri MINATION	e ayer al variation <i>ic soil crite</i>	ne s, etc.): rion is not sa	Fe/N Orga Mottl Othe	none d on Hydric So In Concretions unic Streaking i les (Redoximo er (Explain in R	n Sandy Soils phic Features emarks)	sandy	Within a Wetland?

Remarks

Hydrophytic vegetation, hydric soil, and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

				Data Plot #:	21A-SP1
				Wetland:	21A
WETLAND	DETE		TION		
(Modified from: 1987 ACC	DE We	tlands	Delineatior	n Manual)	
Project/Site: ELST Re-delineation		Date:	10/31/2007	Revi	sited 03-19-14
Applicant/Owner: King County		County:	King County	,	
Investigator: Michael Muscari/Laura Brock		State:	WA		
□ 1987 Method	ethod		Cor	nmunity ID: P	'EM
Do Normal Circumstances exist on the site? Yes	Х	No		d Plot ID: 21A	
Is the site significantly disturbed (Atypical Situation)? Yes	Х	No			
Is the area a potential Problem Area? Yes		No	х		
Flags W21A 1-15. VEGETATION (✓ Dominant species are checked)					pproximately 8% slope Dbservations
Plant Species	% Cove	er Stratu	m Indicator	Cornus ser	ricea 5%
1 Cornus sericea	5	Herb	FACW		erasiformis 10% ctabilis 10%
2. Holcus lanatus	2	Herb	FAC	Holcus lan	
✓ 3. lawn grass (mowed)	40	Herb	UNK		s (mowed) 40%
4. Myosotis scorpioides	10	Herb	FACW		corpioides 10%
✓ 5. Ranunculus repens	30	Herb	FACW	Hedera he	is repens 30% lix 2%
6 . Rubus spectabilis	10	Herb	FAC+		lix-femina 15%
Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.	2 10	00		Equisetum moss 30%	telmeteia 2%
Remarks (Describe disturbances, relevant local variations, se	easonal	effects, et	c.):		
Scirpus microcarpus is interspersed and mowed in lawn. A smare hydrophytic is greater than 50 percent. Hydrophytic vegeta				lake.The percer	nt of dominant species that
HYDROLOGY					
Recorded Data (Describe in Remarks):	w	etland H	drology India	ators (Descri	be in Remarks):
Stream, Lake, or Tide Gage		Primary	Indicators:		·

Other X No Recorded Dat Field Observations:	a Available	X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits
		Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) 4 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *Soil saturation in the upper 12 inches satisfies wetland hydrology criterion.*

03-19-14 Observations - Saturated at surface. Free water in pit at 12 inches below surface.

						Data Plot #	<i>t</i> . 4	21A-SP1	
						Wetland:	2	21 A	
							_		
oject/Site:	ELST Re-de	elineation		Date:	10/31/2007	R	Revisite	ed 03-19-1	14
OIL									
Soil Surve	v Data:								
	•	vood gravelly sandy loar	n 15 to 30 % clopes		Drainage Clas		lv well	drained	
nap onit N	ame. Aluein	vood gravelly salidy loar	n, 10 to 30 % slopes		•				
					Field Observa	tions Confirm	марр	ea Type?	
axonomy	(Subgroup):	Entic Durochrepts			Yes	No <u>X</u>	NA		
rofile Des	scription:								
Depth	Horizon	Matrix Color	Mottle Color		Mottle		Textu	re, Concr	etions.
Inches)	Designation	(Munsell Moist)	(Munsell Moist)		Abundance/C	ontrast		spheres,	
-4	А	10YR 3/1	none		none		sandy	loam	
-10	B1	10YR 5/1	7.5YR 4/6		many, prominent		loamy	sand	
0-16	B2	gley	none		none		sand		
lvdric Soi	il Indicators:								
- His	stosol			Liste	d on Hydric Soil	s List			
His	stic Epipedon			_	In Concretions				
Su	Ifidic Odor			Orga	nic Streaking in	Sandy Soils			
Aq	uic or Peragui	c Moisture Regime	X	Mottl	es (Redoximorp	hic Features)			
Re	ducing Condit	ions		Othe	r (Explain in Re	marks)			
X Gle	eyed or Low-C	hroma Colors	03-19-14 Observatio					none	sa. loam
Hig	gh Organic Co	ntent in Surface Layer		4-	9 10YR 16 10Y 4/			2020	lo. sand gr. sand
		disturbances, local varia	ations etc.):	9-	10 101 4/	1 none		none	yı. sanu
		uistui vantes, iotal valla				oils criterion is			

Hydrophytic Vegetation Present?	Yes	Х	No	Is this Sampling Point Within a Wetland?
Hydric Soils Present?	Yes	Х	No	Yes X No
Wetland Hydrology Present?	Yes	Х	No	

Remarks

Wetland vegetation, hydrology, and soil criteria are satisfied. Therefore, the sample plot is located in a wetland.

Data Plot #: 21A-SP2

Wetland:

Upland near 21A

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	10/31/20	07	Revisited 03-19-14	
Applicant/Owner: King County		County:	King C	County		
Investigator: Michael Muscari, Laura Brock		State:	WA			
□ 1987 Method	WA St. Method			Community ID	: Upland Shrub	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID:	21A-SP2	
Is the site significantly disturbed (Atypical Situation)'	? Yes	No	Х			
Is the area a potential Problem Area?	Yes	No	Х			

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is approximatley 5' south of flag 4 and 3 feet higher in elevation than 21A-SP-1

VE	GET	FATION (> Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	03-19-14 Observations Corylus cornuta 75% Oemleria cerasiformis 5%
	1.	Equisetum telmateia	5	Herb	FACW	Rubus spectabilis 40%
	2.	Geranium robertianum	2	Herb	NL	Rubus ursinus 10%
~	3.	Polystichum munitum	20	Herb	FACU	Equisetum telmeteia 5%
	4.	Pteridium aquilinum	5	Herb	FACU	Geranium robertianum 2%
	5.	Urtica dioica	2	Herb	FAC+	 Polystichum munitum 20% Pteridium aguilinum 5%
~	6.	Corylus cornuta	75	Shrub	FACU	- Urtica dioica 2%
~	7.	Rubus spectabilis	40	Shrub	FAC+	
	8.	Rubus ursinus	10	Shrub	FACU	
		of Dominant Species that are OBL, FACW, or FAC-). Include species noted (*) as showing	AC 33			

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

Corylus cornuta, Rubus spectabilis are dominant in undisturbed upland areas. Adjacent uplands are mowed, maintained lawn. The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Re Stream, Lake, or Aerial Photograph Other	Tide Gage		Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks						
X No Recorded Data Available Field Observations:			Drift Lines Sediment Deposits Drainage Patterns in Wetlands						
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none none none	(in.) (in.) (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)						
	•		nodifications, local variations, etc.):						

03-19-14 Observations - No primary or secondary hydrology indicators observed.

								Data P	ot #:	21A-SP2	2
								Wetlan	d:	Upland I	near 21A
Project/Site	: ELST Re-de	alineation				Date:	10/31/2007		Revis	sited 03-19-	14
FT0jeCt/Site						Dale.	10/31/2007				
SOIL Soil Surve	ey Data:										
Map Unit I	Name: Alderw	vood gravelly sandy	loam	, 15 to 30	% slopes	S	Drainage Cla	ass: Moder	ately we	ell drained	
							Field Observ	ations Con	firm Ma	pped Type	?
Taxonomy	(Subgroup):	Entic Durochrepts					Yes	No X	NA	·	
Profile De	scription:										
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		Mottle C (Munsell			Mottle Abundance/0	Contrast		kture, Conc	
0-15	A	10YR 2/1		none			none		grav	velly sandy lo	bam
15-16	В	10YR 4/3		none			none		loar	my sand	
Hydric So	il Indicators:		03-	19-14 Ob	servatio	n s - 0-18	5 10YR	3/2 non	е	none	gr. sa. loam
Hi	stosol					Liste	d on Hydric So	oils List			
Hi	stic Epipedon					Fe/M	n Concretions				
	ulfidic Odor						nic Streaking i				
	0	c Moisture Regime					es (Redoximor	•	res)		
	educing Condit					Othe	r (Explain in R	emarks)			
	leyed or Low-C gh Organic Co	ntent in Surface Lay	ver								
Remarks	(Describe soil	disturbances, local	variat	ions, etc.):						
Low chron	na soil matrix ir	ndicates hydric soil.	Hydri	ic soil crite	erion is sa	atisfied.					
WETLA	ND DETERI	MINATION									
	tic Vegetation		Yes		No	x	ls t	his Sampli	ing Poi	nt Within a	a Wetland?
	ils Present?		Yes		No –				U		-
•	lydrology Pres	sent?	Yes		No _	Х		Yes		No X	_

Remarks

Hydrophytic vegetation and wetland hydrology criteria are not satisfied. The sample plot is not located in a wetland.

				Data Plot #:	21B-SP1
				Wetland:	21B
WE	TLAND DET	ERMINA	ATION		
(Modified from: 19	87 ACOE W	etlands	Delinea	ation Manual)	
Project/Site: ELST Re-delineation		Date:	11/1/2007	7 Revi	sited 09-12-13
Applicant/Owner: King County		County:	King		
Investigator: Matt Maynard, Chrissy Bailey		State:	WA		
□ 1987 Method	VA St. Method			Community ID: F	PFO
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 21E	3-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х		
Is the area a potential Problem Area?	No	х			
Remarks (Explain sample location, disturbances, pro	blem areas):	_			

This sample plot is located in the center of the wetland approximately 20 feet southeast of flag 21B-9

VEGETATION (> Dominant species are checked) Plant Species % Cover Stratum Indicator Equisetum telmateia FACW trace н 1. Phalaris arundinacea 5 Н FACW 2. Solanum dulcamara 10 Н FAC+ 3. FAC+ Urtica dioica 10 н 4. FACU Corylus cornuta 20 S 5. 5 NI Ribes divaricatum S 6. FACU Rubus armeniacus 10 S 7. Rubus spectabilis 60 s FAC+ 6 8. 40 Alnus rubra FAC 6 9. Percent of Dominant Species that are OBL, FACW, or FAC 67

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:						
Stream, Lake, or Tide Gage							
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits						
	Drainage Patterns in Wetlands						
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:surface(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)						
Remarks (As relevant, describe recent precipitation, hydro Saturation in the upper 12 inches satisfies wetland hydrology	o						

09-12-13 Observations - Inundation observed in ditch within wetland.

				Data Plot Wetland:		21B-SP1 21B
Project/Site: ELST Re-delineation		Date:	11/1/2007	[Revisi	ted 09-12-13
SOIL Soil Survey Data:						
Map Unit Name: Alderwood gravelly san	dy loam 6 to 15% slopes		Drainage Cla	ass: Moderat	ely we	II drained
			Field Observ	ations Confir	m Map	oped Type?
Taxonomy (Subgroup): Entic Durochrep	ts		Yes	No X	NA	
Profile Description:						
Depth Horizon Matrix Color (Inches) Designation (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/	Contrast		ture, Concretions, zospheres, etc.
0-18 A 10YR 2/1	none		none		silt l	oam
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor Aquic or Peraguic Moisture Regim Reducing Conditions X Gleyed or Low-Chroma Colors High Organic Content in Surface L Remarks (Describe soil disturbances, loc	ayer	Fe/Mi Orgar Mottle	d on Hydric So n Concretions nic Streaking i es (Redoximo r (Explain in R	in Sandy Soils		
Chroma 1 soil indicate hydric soils.	ai variations, etc.).					
WETLAND DETERMINATION						
Hydrophytic Vegetation Present?	Yes <u>x</u> No		ls t	this Sampling	g Poir	nt Within a Wetland?
Hydric Soils Present? Wetland Hydrology Present?	Yes X No Yes X No			Yes X	<u> </u>	No

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #:

Wetland:

Upland near 21B

21B-SP2

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/1/200	7 Revisited 09-12-13
Applicant/Owner: King County		County:	King	
Investigator: Matt Maynard, Chrissy Bailey		State:	WA	
□ 1987 Method	A St. Method			Community ID: Upland Forest
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 21B-SP2
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	Х	

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 6 feet southeast of flag 21B-1.

VEGETATION (Dominant species are checked) **Plant Species** Stratum Indicator % Cover Equisetum telmateia FACW trace н 1. Geranium robertianum Н NL trace 2. Polystichum munitum 40 Н FACU 3. 6 Rubus ursinus trace н FACU 4. Urtica dioica Н FAC+ trace 5. 55 FACU Corylus cornuta S 6. FAC+ Rubus spectabilis 10 S 7. Fraxinus latifolia 75 FACW 8. -Percent of Dominant Species that are OBL, FACW, or FAC 33

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:11(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation	, hydrologic modifications, local variations, etc.):

Saturation in the upper 12 inches satisfies wetland hydrology criterion.

						Data Plot #: Wotland:	#: <u>21B-SP2</u>
						Wetland:	Upland near 21B
aiaat/Cita		lineation		Deter	11/1/0007	F	Revisited 09-12-13
-	ELST Re-de	anneation		Date:	11/1/2007	Ľ	
OIL oil Surve	ey Data:						
lap Unit N	Name: Alderw	wood gravelly sandy	oam 6 to 15% slop	pes	Drainage Cla	ass: Moderate	ly well drained
					Field Observ	ations Confirm	n Mapped Type?
axonomy	(Subgroup):	Entic Durochrepts			Yes	No X	NA
rofile De	scription:						
Depth Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Mo		Mottle Abundance/0	Contrast	Texture, Concretions, Rhizospheres, etc.
-16	А	10YR 2/1	none		none		silt loam
Hi Hi Su Ac Re X GI	educing Condit			Fe/N Orga Mott	ed on Hydric So In Concretions anic Streaking i les (Redoximor er (Explain in Re	n Sandy Soils phic Features))
	(Describe soil soil indicate hy	disturbances, local v <i>dric soils.</i>	ariations, etc.):				
						hia Campuliu u	Deint Within a Wetley d
	tic Vegetation	Present?	Yes No		IS t	nis Sampling	Point Within a Wetland?
•	ils Present?		Yes X No			Yes	No X
vetland H	lydrology Pres	sent?	Yes <u>X</u> No)			

Remarks

Hydrophytic vegetation criterion is not satisfied. Therefore, the sample plot is not located in a wetland.

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

Project Site:	ELST - S	outh S	ammamish Seg	ment		City	/County:	ounty: <u>Sammamish/King</u> San			Sampling D	1 0		9-14	
Applicant/Owner:	King Cou	nty							:	State: <u>WA</u>	Sampling P	oint:	<u>W21</u> (rev)	D-SP	<u>1</u>
Investigator(s):	C. Worsle	ey; K. S	Seckel					Se	ction, [.]	Township, Rang	e: <u>S06, T2</u>	4N, R06E			
Landform (hillslope, te	rrace, etc.)	: <u>g</u>	radual slope			Local relief	(concave,	conve	k, none	e): <u>convex</u>		Slope	(%):	<u>5%</u>	
Subregion (LRR):	<u>A</u>			La	t:		I	Long:				Datum:			
Soil Map Unit Name:	Alderwo	od gra	avelly sandy loar	<u>n</u>						NWI class	sification:	PEM			
Are climatic / hydrologi	c conditior	ns on t	he site typical fo	r this t	time of year?	Yes	\boxtimes	No		(If no, explain ir	Remarks.)				
Are Vegetation	Soil	□,	or Hydrology	□,	significantly dist	urbed?	Are "Nori	mal Ciro	cumsta	ances" present?		Yes	\boxtimes	No	
Are Vegetation X,	Soil	□,	or Hydrology	□,	naturally proble	matic?	(If neede	d, expla	ain any	answers in Re	marks.)				

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?		\boxtimes	No						
		\boxtimes	No		Is the Sampled Area within a Wetland?		\boxtimes	No	
		\boxtimes	No						
Pomarke: Now sample plat was documented because the old location for SP4 has been landscaped. This sample plat is located is maintained lows approximately 8									

marks: New sample plot was documented because the old location for SP1 has been landscaped. This sample plot is located in maintained lawn approximately 8 feet north (10 deg) from north end of row of lilac and 3 feet sotheast of ditch.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1				Number of Dominant Species	
2				That Are OBL, FACW, or FAC:	\)
3				Total Number of Dominant	2)
4				Species Across All Strata: (E	2)
50% =, 20% =		= Total Cove	r	Percent of Dominant Species	√B)
Sapling/Shrub Stratum (Plot size: 15 feet)				That Are OBL, FACW, or FAC:	VD)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x1 =	
4				FACW species x2 =	
5				FAC species X3 =	
50% =, 20% =		= Total Cove	r	FACU species x4 =	
Herb Stratum (Plot size: 3 feet)				UPL species x5 =	
1. <u>maintained lawn</u>	<u>95</u>	<u>yes</u>	-	Column Totals:(A)(B)	
2. <u>Scirpus microcarpus</u>	<u>15</u>	no	<u>OBL</u>	Prevalence Index = B/A =	
3. <u>Phalaris arundinacea</u>	<u>10</u>	<u>no</u>	FACW	Hydrophytic Vegetation Indicators:	
4. <u>Ranunculus repens</u>	<u>5</u>	<u>no</u>	FAC	1 – Rapid Test for Hydrophytic Vegetation	
5				2 - Dominance Test is >50%	
6				\Box 3 - Prevalence Index is $\leq 3.0^1$	
7				4 - Morphological Adaptations ¹ (Provide supporting	
8				data in Remarks or on a separate sheet)	
9				5 - Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)	
11					
50% = <u>62.5</u> , 20% = <u>25</u>	<u>125</u>	= Total Cove	r	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: NA)					
1					
2				Hydrophytic	_
50% =, 20% =		= Total Cove	r	Vegetation Yes ⊠ No [Present?	
% Bare Ground in Herb Stratum <u>0</u>					
				wn are all wetland plants with a FAC or wetter indicator status. bra. Both hydric soils and wetland hydrology criteria are met.	

Project Site: ELST - South Sammamish

SOIL

SOIL								Samplin	g Point: <u>W2</u>	1D-SP1	(rev)	
Profile Desc	ription: (Describe to	the dept	th needed to de	ocument the in	dicator or cont	firm the abser	nce of indicate	ors.)				
Depth	Matrix											
(inches)	Color (moist)	%	Color (mo	ist) %	Type ¹	Loc ²	Texture		Remarks			
<u>0-6</u>	10YR 3/2	75	2.5YR 4/	<u>6 25</u>	<u>C</u>	M	loam		_			
<u>6-12</u>	<u>2.5Y 4/2</u>	<u>70</u>	<u>2.5 YR 4/</u>	<u>3 30</u>	<u>C</u>	M	sa. loa	<u>m</u>	_			
<u>12-16</u>	<u>2.5Y 4/1</u>	<u>75</u>	<u>2.5YR 2.5</u>	<u>/4</u> <u>25</u>	<u>C</u>	M	lo. san	<u>d</u>	_			
									_			
									_			
									_			
									_			
									_			
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix												
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :												
Histosol (A1) Sandy Redox (S5)								2 cm Mucl	k (A10)	-		
Histic E	pipedon (A2)	x (S6)			Red Parer	nt Material (TF2)					
Black H	listic (A3)			Loamy Mucky	Mineral (F1) (e	xcept MLRA 1)	Very Shall	ow Dark Su	rface (T	F12)	
☐ Hydrog	en Sulfide (A4)			Loamy Gleyed	Matrix (F2)	•		Other (Exp	olain in Rem	arks)		
Deplete	ed Below Dark Surfac	ce (A11)		Depleted Matr	ix (F3)							
Thick E	Dark Surface (A12)	. ,		Redox Dark S	urface (F6)							
	Mucky Mineral (S1)			Depleted Dark	Surface (F7)			cators of hyd				
□ Sandy	Gleyed Matrix (S4)			Redox Depres	sions (F8)			etland hydro			t,	
·	ayer (if present):			•	()		u			mano.		
Type:	, , ,											
Depth (inche	s):					Hydric Soils	s Present?		Yes	\boxtimes	No	
Remarks:						,						

HYDROLOGY

Wetla	and Hydrology Indicat	ors:													
Prima	ary Indicators (minimum	of one r		Sec	ondary Indicators (2 or r	nore requir	red)								
Surface Water (A1) Water-Stained Leaves (B9)										Water-Stained Leaves (B9)					
High Water Table (A2) (except MLRA 1, 2, 4A, and 4B)										(MLRA 1, 2, 4A, and	4B)				
Image: Mage:										Drainage Patterns (B1	0)				
Water Marks (B1) Aquatic Invertebrates (B13)										Dry-Season Water Ta	ble (C2)				
										Saturation Visible on A	Aerial Imag	ery (C	9)		
										Geomorphic Position	(D2)				
										Shallow Aquitard (D3)					
Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6)										FAC-Neutral Test (D5)				
Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A)										Raised Ant Mounds (D	06) (LRR A)			
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)										Frost-Heave Hummoc	ks (D7)				
	Sparsely Vegetated Concave Surface (B8)														
Field Observations:															
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):									
Wate	r Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>13</u>								
	ation Present? des capillary fringe)	Yes	\boxtimes	No		Depth (inches):	<u>10</u>	Wetlar	nd Hy	drology Present?	Yes	\boxtimes	No		
Desc	ribe Recorded Data (str	eam gau	ge, mo	nitoring	well, a	erial photos, previous i	nspections), if availat	ole:							
Rem	arks: Flowing water	observe	d in adj	acent d	itch.										

					Data Plot #:	22AB-SP1
					Wetland:	22AB
WETL	AND [DETE		ATION		
(Modified from: 1987	ACO	E We	etlands	Deline	eation Manual)	
Project/Site: ELST Re-delineation			Date:	4/4/200	8 Rev	risited 09-20-13
Applicant/Owner: King County			County:	King		
Investigator: Erik Christensen, Colin Worsley			State:	WA		
□ 1987 Method	St. Met	hod			Community ID:	PFO
Do Normal Circumstances exist on the site?	Yes	Х	No		Field Plot ID: 22	AB-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes		No	Х		-
Is the area a potential Problem Area?	Yes		No	Х		

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 25 feet east of flag W22B-13 and the trail. The sample plot is located in the willow forested area.

F	Plant Species	% Cover	Stratum	Indicator	Athyrium filix-femina 35% Cardamine oligosperma 5%
1. A	Athyrium filix-femina	35	Herb	FAC	Epilobium ciliatum trace
2. 0	Cardamine oligosperma	5	Herb	FAC	Geranium robertianum 15%
3. E	Epilobium ciliatum	trace	Herb	FACW-	Lysichiton americanus trace
4. 0	Geranium robertianum	15	Herb	NL	Polystichum munitum 15%
5. L	_ysichiton americanus	trace	Herb	OBL	 Cornus sericea 80% Rubus armeniacus 5%
6. F	Polystichum munitum	15	Herb	FACU	Alnus rubra 10%
7. 0	Cornus sericea	80	Shrub	FACW	Salix lucida 30%
8. F	Rubus armeniacus	5	Shrub	FACU	Rubus parviflorus 10%
9. A	Alnus rubra	10	Tree	FAC	
10. 5	Salix lucida	30	Tree	FACW+	-

morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant vegetation that is hydrophytic is greater than 50%. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Re	emarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or	Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Field Observations:		Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (ii 2 (ii surface (ii	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describ	e recent precipita	hydrologic modifications, local variations, etc.):

Soil saturation in the upper 12 inches satisfies wetland hydrology criterion.

09-20-13 Observations - Soil saturated at 12 inches below the surface. Areas are saturated to the surface in vicinity.

Project/Site: ELST Re-delineation Date: 4/4/2008 Revisited 09-20-13 SOIL Soil Survey Data: Map Unit Name: Alderwood gravelly sandy loam, 6 to 15 % slopes Drainage Class: Moderately well drained Field Observations Confirm Mapped Type? Taxonomy (Subgroup): Entic Durochrepts Yes No X NA					Data Plot a Wetland:	#: <u>22AB-SP1</u> 22AB
Soil Survey Data: Map Unit Name: Alderwood gravelly sandy loam, 6 to 15 % slopes Drainage Class: Moderately well drained Field Observations Confirm Mapped Type? Taxonomy (Subgroup): Entic Durochrepts Yes No X NA Profile Description: Depth Horizon Matrix Color Mottle Color Mottle Texture, Concretions, Rhizospheres, etc. 0-18 A 10YR 2/1 none none sandy muck Profile Description: 0-18 A 10YR 2/1 none none sandy muck Image Class: Moderately well drained Hydric Soil Indicators: Histosol	Project/Site: ELST Re-delineation		Date:	4/4/2008	R	evisited 09-20-13
Field Observations Confirm Mapped Type? Taxonomy (Subgroup): Entic Durochrepts Yes No X NA Profile Description: Matrix Color Mottle Color Mottle Mottle Texture, Concretions, Rhizospheres, etc. Depth Horizon Matrix Color Mottle Color Mottle Abundance/Contrast Texture, Concretions, Rhizospheres, etc. 0-18 A 10YR 2/1 none none sandy muck Profile Description: Designation Matrix Color Mottle Color Mottle Abundance/Contrast Texture, Concretions, Rhizospheres, etc. 0-18 A 10YR 2/1 none none sandy muck Identities and muck Ves Sandy muck Identities and muck Hydric Soil Indicators: Histosol Listed on Hydric Soils List Histic Epipedon Fe/Mn Concretions Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Other (Explain in Remarks) X Gleyed or Low-Chroma Colors Y Generality of the soil disturbanc						
Taxonomy (Subgroup): Entic Durochrepts Yes No X NA Profile Description: Designation Matrix Color Mottle Color Mottle Abundance/Contrast Texture, Concretions, Rhizospheres, etc. 0-18 A 10YR 2/1 none none sandy muck Profile Description: 0-18 A 10YR 2/1 none none sandy muck OP-20-13 Observations - Gravel present in la Hydric Soil Indicators: Histosol	Vap Unit Name: Alderwood gravelly sandy lo	am, 6 to 15 % slopes		Drainage Clas	s: Moderate	ly well drained
Profile Description: Matrix Color (Munsell Moist) Mottle Color (Munsell Moist) Mottle Abundance/Contrast Texture, Concretions, Rhizospheres, etc. 0-18 A 10YR 2/1 none none sandy muck Designation 0-18 A 10YR 2/1 none none sandy muck Description: Hydric Soil Indicators: Histosol Listed on Hydric Soils List Histic Epipedon Fe/Mn Concretions Sulfidic Odor Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):				Field Observa	tions Confirm	n Mapped Type?
Depth (Inches) Horizon Designation Matrix Color (Munsell Moist) Mottle Color (Munsell Moist) Mottle Abundance/Contrast Texture, Concretions, Rhizospheres, etc. 0-18 A 10YR 2/1 none none sandy muck OP-20-13 Observations - Gravel present in la Histosol Histosol Histic Epipedon Elisted on Hydric Soils List Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer	Taxonomy (Subgroup): Entic Durochrepts			Yes	No <u>X</u>	NA
Inches) Designation (Munsell Moist) (Munsell Moist) Abundance/Contrast Rhizospheres, etc. 0-18 A 10YR 2/1 none none sandy muck Og-20-13 Observations - Gravel present in la Hydric Soil Indicators: Histosol Listed on Hydric Soils List Histic Epipedon Fe/Mn Concretions Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):	Profile Description:					
Operations - Gravel present in la Hydric Soil Indicators: Histosol Listed on Hydric Soils List Histic Epipedon Fe/Mn Concretions Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):					ontrast	
Hydric Soil Indicators: Listed on Hydric Soils List Histosol Listed on Hydric Soils List Histic Epipedon Fe/Mn Concretions Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):	D-18 A 10YR 2/1	none		none		sandy muck
Histosol Listed on Hydric Soils List Histic Epipedon Fe/Mn Concretions Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer				09-2	0-13 Observa	ations - Gravel present in
Histic Epipedon Fe/Mn Concretions Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):	Hydric Soil Indicators:					
Sulfidic Odor Organic Streaking in Sandy Soils Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):	Histosol		Lister	d on Hydric Soi	s List	
Aquic or Peraguic Moisture Regime Mottles (Redoximorphic Features) Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):	Histic Epipedon		Fe/M	In Concretions		
Reducing Conditions Other (Explain in Remarks) X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):	Sulfidic Odor		Orga	nic Streaking in	Sandy Soils	
X Gleyed or Low-Chroma Colors X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):			_)
X High Organic Content in Surface Layer Remarks (Describe soil disturbances, local variations, etc.):			Othe	r (Explain in Re	marks)	
Remarks (Describe soil disturbances, local variations, etc.):						
	A High Organic Content in Surface Layer					
Low soil chroma and high organic content in the surface layer indicate hydric soils. Hydric soil chterion is satisfied.		iations, etc.):				
		, ,	a budri-	anila Iludria -	il aritarian i-	acticfied
		, ,	e hydric	soils. Hydric so	oil criterion is :	satisfied.

Hydric Soils Present?	Yes	Х	No	 Yes	x	No	
Wetland Hydrology Present?	Yes	Х	No	 100 _	<u>^</u>	NO	

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

					Data Plot #:	22AB-SP2
					Wetland:	22AB
			ERMIN			
(Modified from: 198	7 ACO	EW	etlands	Delinea	tion Manual)	
Project/Site: ELST Re-delineation			Date:	4/4/2008	Revi	sited 09-20-13
Applicant/Owner: King County			County	: King		
Investigator: Erik Christensen, Colin Worsley			State:	WA		
□ 1987 Method	A St. Met	thod			Community ID: P	SS
Do Normal Circumstances exist on the site?	Yes	Х	No		Field Plot ID: 22A	B-SP2
Is the site significantly disturbed (Atypical Situation)?	Yes		No	Х		
Is the area a potential Problem Area?	Yes		No	Х		
Remarks (Explain sample location, disturbances, prob	lem area	is):	-			
This sample plot is located approximately 13.5 feet at 3	00 degre	es no	rthwest of	f flag W22I	B- <i>29.</i>	

09-20-13 Observations **VEGETATION** (> Dominant species are checked) Athyrium filix-femina 20% **Plant Species** % Cover Stratum Indicator Phalaris arundinacea 20% Athyrium filix-femina 20 Herb FAC ~ 1. Cornus sericea 40% Phalaris arundinacea 20 Herb FACW Rubus armeniacus 30% 2. Rubus spectabilis 5% 30 Herb OBL Scirpus microcarpus З. 6 Rubus parviflorus 5% OBL Typha latifolia 15 Herb 4. FACW Cornus sericea 40 Shrub 5. 5 FACW-Physocarpus capitatus Shrub 6. FACU Rubus armeniacus 30 Shrub 7. ~ Rubus spectabilis 5 Shrub FAC+ 8. Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing 80 morphological adaptations to wetlands. "T" indicates trace. Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): More than 50% of dominant vegetation is hydrophytic. Hydrophytic vegetation criterion is satisfied. **HYDROLOGY**

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other	Inundated X Saturated in Upper 12 inches
X No Recorded Data Available	Water Marks Drift Lines
Field Observations:	Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:11(in.)Depth to Saturated Soil:surface(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrole	ogic modifications, local variations, etc.):

Soil saturation in the upper 12 inches satisfies wetland hydrology criterion.

						Data Plot #	: 22AB-SP2
						Wetland:	22AB
Project/Site	e: ELST Re-de	elineation		Date:	4/4/2008	Re	evisited 09-20-13
SOIL Soil Surv	ey Data:						
Map Unit	Name: Alderv	wood gravelly sandy lo	am, 6 to 15 % slopes		Drainage Cla	ass: Moderately	well drained
			· ·		-	rations Confirm	
T		Fatia Duna akwanta					
-	y (Subgroup):	Entic Durochrepts			Yes	No <u>X</u>	NA
Profile De Depth (Inches)	escription: Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/0		Texture, Concretions, Rhizospheres, etc.
0-6	A	10YR 2/1	none		none		mucky loam
6-8	A2	10YR 2/1	none		none		mucky sandy loam
8-18	A3	2.5Y 2.5/1	none		none		mucky loam
Hydric So	oil Indicators:						
н	istosol			Liste	d on Hydric So	oils List	
н	istic Epipedon			Fe/M	n Concretions		
S	ulfidic Odor			Orga	nic Streaking i	n Sandy Soils	
		ic Moisture Regime			•	phic Features)	
	educing Condit			Othe	r (Explain in Re	emarks)	
	ileyed or Low-C						
<u> х </u> н	igh Organic Co	ontent in Surface Layer					
	(Describe soil	disturbances, local var	. ,				
		In a constant of a second start for the		o hydric	soils Hydric s	soil criterion is s	atisfied

Hydrophytic Vegetation Present?	Yes	Х	No	Is this Sampling Point Within a Wetland?
Hydric Soils Present?	Yes	Х	No	Yes X No
Wetland Hydrology Present?	Yes	Х	No	

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

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

Project Site:	ELST - Se	outh S	ammamish Seg		City	/County:	Sam	namis	h/King	Sampling D	ate:	<u>10-2</u>			
Applicant/Owner:	King Cou	nty								State: <u>WA</u>	Sampling P	oint:	<u>W22</u> (rev)	CD-S	<u>P1</u>
Investigator(s):	C. Worsle	ey; M. I	<u>Maynard</u>					Se	ction,	Township, Rang	e: <u>S06, T2</u>	4N, R06E			
Landform (hillslope, ter	rrace, etc.)	: <u>D</u>	<u>Ditch</u>			Local relief	(concave,	conve	x, non	e): <u>concave</u>		Slope	(%):	<u>0</u>	
Subregion (LRR):	<u>A</u>			La	t:			Long:		_		Datum:			
Soil Map Unit Name:	<u>Alderwo</u>	od gra	velly sandy loan	n, 6 to	15 % slopes					NWI class	sification:	PEM			
Are climatic / hydrologi	c conditior	ns on t	he site typical fo	r this t	time of year?	Yes	\boxtimes	No		(If no, explain in	Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	significantly dist	urbed?	Are "Nori	mal Cir	cumsta	ances" present?		Yes	\boxtimes	No	
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	naturally problem	matic?	(If neede	d, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
Pomarks: Sample plot is located at south and of Watlar	N4 2200		rovim	atoly 5	foot oast of ovisting trail odgo, across from post with two sig	ne ("Plo		Stov O	n

emarks: Sample plot is located at south end of Wetland 22CD, approximately 5 feet east of existing trail edge, across from post with two signs ("Please Stay On Improved Surfaces" and "Leash Pets Obey Scoop Laws"). At edge of ditch bottom.

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot size: <u>NA</u>)	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:		
1 2				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u>	(A)
3 4.				Total Number of Dominant Species Across All Strata:	<u>3</u>	(B)
50% =, 20% = Sapling/Shrub Stratum (Plot size: NA)		= Total Cove	er	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>67</u>	(A/B
1				Prevalence Index worksheet:		
2.				Total % Cover of:	Multiply by:	
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =		= Total Cove	er	FACU species	x4 =	
Herb Stratum (Plot size: <u>3 feet</u>)				UPL species	x5 =	
1. <u>Scirpus microcarpus</u>	<u>40</u>	yes	OBL	Column Totals: (A)		(B)
2. <u>Holcus lanatus</u>	<u>20</u>	<u>yes</u>	FAC		= B/A =	
3. <u>Ranunculus repens</u>	<u>10</u>	no	FAC	Hydrophytic Vegetation Indicators:		
4. Lotus corniculatus	<u>5</u>	no	FAC	□ 1 – Rapid Test for Hydrophytic \	/egetation	
5. <u>Veronica americana</u>	<u>5</u>	no	OBL	2 - Dominance Test is >50%		
6. <u>Glyceria elata</u>	<u>2</u>	no	FACW	\Box 3 - Prevalence Index is <3.0 ¹		
7. <u>Convolvulus arvensis</u>	<u>2</u>	<u>no</u>	<u>NL (UPL)</u>	4 - Morphological Adaptations ¹ (
8				data in Remarks of on a sepa	*	
9				5 - Wetland Non-Vascular Plants	5 ¹	
10	. <u></u>			Problematic Hydrophytic Vegeta	tion ¹ (Explain)	
11				¹ Indicators of hydric soil and wetland h	audrology must	
50% = 42, 20% = 17	<u>84</u>	= Total Cove	er	be present, unless disturbed or proble		
Woody Vine Stratum (Plot size: 10 feet)						
1. <u>Rubus armeniacus</u>	<u>10</u>	<u>yes</u>	FACU			
2				Hydrophytic Vegetation Yes	🛛 No	
50% =, 20% =	<u>10</u>	= Total Cove	er	Present?		
% Bare Ground in Herb Stratum 5						

Project Site: ELST - South Sammamish

SOIL

SOIL								Sampling Point: W	22CD-SP	<u>1 (rev)</u>	
Profile Desc	ription: (Describe f	to the depth	needed to d	ocument the inc	licator or confir	m the absence	e of indicato	ors.)			
Depth	Matrix			Redox	Features						-
(inches)	Color (moist)	%	Color (mo	oist) %	Type ¹	Loc ²	Texture		Remarks	5	
<u>0-16</u>	<u>10YR 2/1</u>	100	-	<u>=</u>	<u> </u>	-	<u>gr. sa. lo</u> a	am			
<u>16-20</u>	<u>N 3/-</u>	<u>100</u>	<u>-</u>	=	<u>-</u>	<u>-</u>	<u>sa. loar</u>	<u>n</u>			
								. <u> </u>			
								. <u> </u>			
								. <u> </u>			
								. <u> </u>			
								. <u> </u>			
								. <u> </u>			
¹ Type: C= Co	oncentration, D=Dep	letion, RM=	Reduced Matr	ix, CS=Covered	or Coated Sand	Grains. ² Lo	ocation: PL=	Pore Lining, M=Matrix			
Hydric Soil I	Indicators: (Applica	able to all L	RRs, unless	otherwise noted	.)		Indic	ators for Problematic	Hydric S	ioils³:	
Histoso	ol (A1)			Sandy Redox (S5)			2 cm Muck (A10)			
Histic E	Epipedon (A2)			Stripped Matrix	(S6)			Red Parent Material	(TF2)		
Black H	Histic (A3)			Loamy Mucky I	Vineral (F1) (exc	ept MLRA 1)		Very Shallow Dark S	urface (TI	F12)	
□ Hydrog	gen Sulfide (A4)			Loamy Gleyed	Matrix (F2)		\boxtimes	Other (Explain in Re	marks)		
Deplet	ed Below Dark Surfa	ace (A11)		Depleted Matrix	k (F3)						
Thick [Dark Surface (A12)			Redox Dark Su	rface (F6)						
□ Sandy	Mucky Mineral (S1)			Depleted Dark	Surface (F7)			cators of hydrophytic ve etland hydrology must			
□ Sandy	Gleyed Matrix (S4)			Redox Depress	sions (F8)			nless disturbed or probl		ι,	
Restrictive I	_ayer (if present):										
Туре:											
Depth (inche	s):					Hydric Soils F	Present?	Yes	\boxtimes	No	
Remarks:							ne presence	of hydrophytic vegetati	on and we	etland hyd	irology,
	and a dark matrix w	with organic	material, indic	ate the hydric soi	l criterion is satis	fied.					

HYDROLOGY

Wetl	and Hydrology Indica	tors:												
Prim	ary Indicators (minimur	n of one r	equired	; check	all tha	t apply)			Sec	ondary Indicators (2 or i	more requir	ed)		
	Surface Water (A1)					Water-Stained Leave	s (B9)			Water-Stained Leaves	s (B9)			
\boxtimes	High Water Table (A2	2)				(except MLRA 1, 2,	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B	10)			
	Water Marks (B1)					Aquatic Invertebrates	; (B13)			Dry-Season Water Ta	ble (C2)			
	Sediment Deposits (E	32)				Hydrogen Sulfide Od	or (C1)			Saturation Visible on	Aerial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizospher	es along Living Root	s (C3)		Geomorphic Position	(D2)			
	Algal Mat or Crust (B	4)				Presence of Reduced	d Iron (C4)			Shallow Aquitard (D3))			
	Iron Deposits (B5)					Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5	5)			
	Surface Soil Cracks ((B6)				Stunted or Stresses I	Plants (D1) (LRR A)			Raised Ant Mounds (I	D6) (LRR A)		
	Inundation Visible on	Aerial Im	agery (B7)		Other (Explain in Rer	narks)			Frost-Heave Hummod	cks (D7)			
	Sparsely Vegetated (Concave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>7</u>							
	ration Present? Ides capillary fringe)	Yes		No		Depth (inches):	surface	Wetla	nd Hy	drology Present?	Yes	\boxtimes	No	
Desc	ribe Recorded Data (st	iream gau	ige, mo	nitoring	well, a	aerial photos, previous i	nspections), if availa	ible:						
Rem	arks: 3 inches inun	dation in	bottom	of ditch	n prese	nt immediately adjacen	t to soil pit. Soil satu	uration to	the su	urface satisfies the wetla	and hydrolo	gy crit	erion.	

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

Project Site:	<u>ELST - S</u>	outh S	ammamish Seg	nent		City	/County:	Sami	namis	h/King	Sampling D	ate:	<u>10-2</u>		
Applicant/Owner:	King Cou	nty								State: <u>WA</u>	Sampling P	oint:	<u>W22</u> (rev)	CD-S	<u>P2</u>
Investigator(s):	C. Worsle	ey; M. I	Maynard					Se	ction,	Township, Rang	e: <u>S06, T2</u>	4N, R06E			
Landform (hillslope, ter	rrace, etc.)): <u>h</u>	<u>illslope</u>			Local relief	(concave,	conve	x, non	e): <u>convex</u>		Slope	(%):	<u>2</u>	
Subregion (LRR):	<u>A</u>			La	t:		I	Long:		_		Datum:			
Soil Map Unit Name:	<u>Alderwo</u>	od gra	velly sandy loar	<u>n, 6 to</u>	15 % slopes					NWI class	ification:	<u>NA</u>			
Are climatic / hydrologi	ic conditio	ns on t	he site typical fo	r this t	time of year?	Yes	\boxtimes	No		(If no, explain in	Remarks.)				
Are Vegetation	Soil	□,	or Hydrology	□,	significantly dist	urbed?	Are "Norr	mal Cir	cumst	ances" present?		Yes	\boxtimes	No	
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	naturally proble	matic?	(If neede	d, expla	ain an	y answers in Rei	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes		No		Is the Sampled Area within a Wetland?	Yes		No	\boxtimes
Wetland Hydrology Present?	Yes		No	\boxtimes					
Remarks: Sample plot is located approximately 15 feet	east of	wetla	nd boı	undarv	flag W22CD-4, in Rubus armeniacus, just west of Thuja plica	ata. Ne	ar sou	th enc	l of

Remarks: Sample plot is located approximately 15 feet east of wetland boundary flag W22CD-4, in Rubus armeniacus, just west of Thuja plicata. Near south end of W22CD.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 feet)	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:		
 <u>Thuja plicata</u> 	<u>15</u>	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>4</u>	(A)
3				Total Number of Dominant Species Across All Strata:	<u>5</u>	(B)
50% =, 20% = Sapling/Shrub Stratum (Plot size: <u>10 feet</u>)	<u>15</u>	= Total Cove	er	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>80</u>	(A/B)
1. Cornus alba (Cornus sericea)	<u>10</u>	<u>ves</u>	FACW	Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =	<u>10</u>	= Total Cove	ər	FACU species	x4 =	
Herb Stratum (Plot size: <u>3 feet</u>)				UPL species	x5 =	
1. <u>Scirpus microcarpus</u>	<u>2</u>	no	OBL	Column Totals: (A)		(B)
2. Equisetum telmateia	<u>15</u>	<u>yes</u>	FACW	Prevalence Index =	= B/A =	
3. Ranunculus repens	2	no	FAC	Hydrophytic Vegetation Indicators:		
4. <u>Phalaris arundinacea</u>	<u>-</u> 10	ves	FACW	1 – Rapid Test for Hydrophytic V	egetation	
5		_		☑ 2 - Dominance Test is >50%		
6				3 - Prevalence Index is <3.0 ¹		
7						
8				data in Remarks or on a sepa		
9.				5 - Wetland Non-Vascular Plants	s ¹	
10.				Problematic Hydrophytic Vegeta	tion ¹ (Explain)	
11.						
50% = 15, 20% = 6	29	= Total Cove	er	¹ Indicators of hydric soil and wetland h		
Woody Vine Stratum (Plot size: <u>10 feet</u>)	20	- 10101 0010		be present, unless disturbed or problem	matic.	
1. Rubus armeniacus	<u>60</u>	yes	FACU			
2	<u></u>	,		Hydrophytic		
50% =, 20% =	60	= Total Cove		Vegetation Yes	No No	
	<u></u>			Present?		
% Bare Ground in Herb Stratum 5						

Project Site: ELST - South Sammamish

SOIL

SOI	L									S	Sampling	Point: W2	2CD-SP	<u>2 (rev)</u>	
Profi	ile Descı	iption: (Describe t	o the depth	needed to d	ocument the	indicator of	or confirm	the absenc	e of indic	ators.)					
D	epth	Matrix			Re	dox Feature	es								
(inch	nes)	Color (moist)	%	Color (mo	oist) %	6 -	Type ¹	Loc ²	Textu	ire		I	Remarks	5	
<u>(</u>)-20	<u>10YR 2/1</u>	100	-	<u> </u>		-	-	gr. sa	loam					
_															
_															
_															
_															
_															
_															
_															
1Тур	e: C= Co	ncentration, D=Dep	letion, RM=l	Reduced Matr	ix, CS=Cover	ed or Coate	ed Sand G	rains. ² L	ocation: I	PL=Pore	Lining, N	I=Matrix			
Hydr	ric Soil lı	ndicators: (Applica	ble to all L	RRs, unless	otherwise no	ted.)			In	dicators	for Prol	olematic H	lydric S	oils³:	
	Histoso	l (A1)			Sandy Redo	ox (S5)] 2 c	m Muck (A10)			
	Histic E	pipedon (A2)			Stripped Ma	ıtrix (S6)] Re	d Parent	Material (1	F2)		
	Black H	istic (A3)			Loamy Muc	ky Mineral ((F1) (exce	pt MLRA 1)] Ve	ry Shallov	w Dark Su	rface (TF	-12)	
	Hydrog	en Sulfide (A4)			Loamy Gley	ed Matrix (f	F2)] Oth	ner (Expla	ain in Rem	arks)		
	Deplete	d Below Dark Surfa	ce (A11)		Depleted Ma	atrix (F3)									
	Thick D	ark Surface (A12)			Redox Dark	Surface (F	6)								
	Sandy I	Mucky Mineral (S1)			Depleted Da	ark Surface	(F7)		3			phytic veg			
	Sandy (Gleyed Matrix (S4)			Redox Depr	essions (F	3)					l or problei		ι,	
Rest	rictive L	ayer (if present):													
Туре	:														
Dept	h (inches): <u> </u>					н	ydric Soils I	Present?			Yes		No	\bowtie
Rem	arks:														

HYDROLOGY

Wetla	and Hydrology Indicat	ors:											
Prima	ary Indicators (minimum	of one re	equired	; check	all that	t apply)		Sec	ondary Indicators (2 or r	more requir	ed)		
	Surface Water (A1)					Water-Stained Leaves (B9)			Water-Stained Leaves	s (B9)			
	High Water Table (A2))				(except MLRA 1, 2, 4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
	Saturation (A3)					Salt Crust (B11)			Drainage Patterns (B1	10)			
	Water Marks (B1)					Aquatic Invertebrates (B13)			Dry-Season Water Ta	ble (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Odor (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizospheres along Living	Roots (C3)	Geomorphic Position	(D2)			
	Algal Mat or Crust (B4	-)				Presence of Reduced Iron (C4)			Shallow Aquitard (D3))			
	Iron Deposits (B5)					Recent Iron Reduction in Tilled Soils	; (C6)		FAC-Neutral Test (D5)			
	Surface Soil Cracks (E	36)				Stunted or Stresses Plants (D1) (LR	RA)		Raised Ant Mounds (D6) (LRR A)		
	Inundation Visible on	Aerial Ima	agery (E	37)		Other (Explain in Remarks)			Frost-Heave Hummoo	:ks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)									
Field	Observations:												
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):							
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):							
	ation Present? des capillary fringe)	Yes		No	\boxtimes	Depth (inches):	We	etland Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ge, mor	nitoring	well, a	erial photos, previous inspections), if a	available:						
Rema	arks:												

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

Project Site:	ELST - S	outh S	ammamish Seg	ment		Cit	ty/County:	Sam	mamis	sh/King	Sampling Da	ate:	<u>10-2</u>	<u>5-13</u>	
Applicant/Owner:	King Cou	nty								State: WA	Sampling Po	pint:	<u>W22</u>	2E-SP	<u>1</u>
Investigator(s):	C. Worsle	ey; M.	<u>Maynard</u>					Se	ction,	Township, Rang	ge: <u>S06, T2</u> 4	4N, R06E	-		
Landform (hillslope, ter	race, etc.)): <u>C</u>	Ditch/Swale			Local relie	f (concave	, conve	x, non	e): <u>concave</u>		Slope	e (%):	<u>0</u>	
Subregion (LRR):	<u>A</u>			La	t:			Long:		_	I	Datum:			
Soil Map Unit Name:	Alderwo	od gra	avelly sandy loar	n, 6 to	15 % slopes					NWI class	sification:	PEM			
Are climatic / hydrologi	c conditior	ns on t	the site typical fo	r this	time of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	\Box ,	significantly dist	urbed?	Are "Nor	mal Cir	cumst	ances" present?	•	Yes	\boxtimes	No	
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	naturally proble	matic?	(If neede	d, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
Remarks: Sample plot is located approximately 3 feet v	vest of t	rail in	ditch/	swale.	Toward south end of Wetland 22E.				

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: NA)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test Worksheet:		
1 2				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u>	(A)
3				Total Number of Dominant Species Across All Strata:	<u>3</u>	(B)
50% =, 20% = Sapling/Shrub Stratum (Plot size: NA)		= Total Cove	er	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u>	(A/B)
1				Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species	x1 =	_
4				FACW species	x2 =	_
5				FAC species	x3 =	_
50% =, 20% =		= Total Cove	er	FACU species	x4 =	_
Herb Stratum (Plot size: <u>3 feet, confined to wetland</u> boundary)				UPL species	x5 =	_
1. <u>Equistem telmateia</u>	<u>80</u>	<u>yes</u>	FACW	Column Totals: (A)		(B)
2. <u>Scirpus microcarpus</u>	<u>30</u>	<u>yes</u>	<u>OBL</u>	Prevalence Index = B/A	=	
3. Phalaris arundinacea	<u>30</u>	<u>yes</u>	FACW	Hydrophytic Vegetation Indicators:		
4. <u>Holcus lanatus</u>	<u>10</u>	<u>no</u>	FAC	1 – Rapid Test for Hydrophytic Vegeta	ation	
5. <u>Ranunculus repens</u>	<u>5</u>	<u>no</u>	FAC	2 - Dominance Test is >50%		
6. Lysichiton americanus	<u>5</u>	<u>no</u>	OBL	\Box 3 - Prevalence Index is $\leq 3.0^1$		
 <u>Stachys chamissonis</u> 	<u>2</u>	<u>no</u>	FACW	4 - Morphological Adaptations ¹ (Providata in Remarks or on a separate		
9.				5 - Wetland Non-Vascular Plants ¹		
10				Problematic Hydrophytic Vegetation ¹	(Explain)	
11						
50% = <u>66</u> , 20% = <u>26</u>	<u>132</u>	= Total Cove	er	¹ Indicators of hydric soil and wetland hydrol be present, unless disturbed or problematic		
Woody Vine Stratum (Plot size: 10 feet)						
1. <u>Rubus armeniacus</u>	<u>5</u>	<u>n/a*</u>	FACU			
2. <u>Solanum dulcamara</u>	<u>2</u>	no	FAC	Hydrophytic		_
50% = <u>4</u> , 20% = <u>1</u>	<u>7</u>	= Total Cove	ər	Vegetation Yes Present?	No No	
% Bare Ground in Herb Stratum 0						

US Army Corps of Engineers

Project Site: ELST - South Sammamish

SOIL

SOI	L									Sampling Point: W22E-SP1
Profi	ile Descr	iption: (Describe t	o the dept	h needed to d	locument t	he indicato	r or confir	m the absence	of indicato	rs.)
D	epth	Matrix				Redox Featu	ires			
(inch	nes)	Color (moist)	%	Color (mo	oist)	%	Type ¹	Loc ²	Texture	Remarks
<u>C</u>	0-13	<u>10YR 2/2</u>	100	-			-	-	silt loam	with some organics
<u>1</u>	3-20	<u>10Y 4/1</u>	<u>90</u>	<u>10YR 4</u> /	<u>/6</u>	<u>10</u>	<u>C</u>	M	<u>gr. sa. loa</u>	m with small cobbles
_					-					
_					-					
_					-					
_										
_					-					
					· –					
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix										
Hydr	ric Soil Ir	ndicators: (Applica	able to all L	RRs, unless	otherwise	noted.)			Indica	ators for Problematic Hydric Soils ³ :
	Histoso	l (A1)			Sandy Re	edox (S5)				2 cm Muck (A10)
	Histic E	pipedon (A2)			Stripped	Matrix (S6)				Red Parent Material (TF2)
	Black H	istic (A3)			Loamy M	ucky Minera	l (F1) (exc	ept MLRA 1)		Very Shallow Dark Surface (TF12)
	Hydrog	en Sulfide (A4)			Loamy G	leyed Matrix	(F2)		\boxtimes	Other (Explain in Remarks)
	Deplete	d Below Dark Surfa	ice (A11)		Depleted	Matrix (F3)				
	Thick D	ark Surface (A12)			Redox Da	ark Surface	(F6)			
	Sandy I	Mucky Mineral (S1)			Depleted	Dark Surfac	ce (F7)			ators of hydrophytic vegetation and
	Sandy (Gleyed Matrix (S4)			Redox D	epressions (F8)			tland hydrology must be present, less disturbed or problematic.
Rest	rictive L	ayer (if present):								
Туре	e:									
Dept	h (inches):						Hydric Soils P	resent?	Yes 🛛 No 🗌
Rem										turbed along trail corridor. The presence of o disturbance, indicate the hydric soil criterion is

HYDROLOGY

Wetl	Wetland Hydrology Indicators:													
Prim	ary Indicators (minimum	of one r	equired	; check	all that	t apply)			Sec	ondary Indicators (2 or r	more requir	ed)		
	Surface Water (A1)					Water-Stained Leave	s (B9)			Water-Stained Leaves	s (B9)			
\boxtimes	High Water Table (A2))				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)		Drainage Patterns (B10)						
	Water Marks (B1)					Aquatic Invertebrates	(B13)		Dry-Season Water Table (C2)					
	Sediment Deposits (B2)									Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C							s (C3)		Geomorphic Position	(D2)			
	Algal Mat or Crust (B4	-)				Presence of Reduced	l Iron (C4)			Shallow Aquitard (D3)	1			
	Iron Deposits (B5)					Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5)			
	Surface Soil Cracks (B6)								Raised Ant Mounds (D6) (LRR A)					
	Inundation Visible on Aerial Imagery (B7)									Frost-Heave Hummod	cks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>11</u>							
	ation Present? des capillary fringe)	Yes	\boxtimes	No		Depth (inches):	surface	Wetlar	nd Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ge, moi	nitoring	well, a	erial photos, previous i	nspections), if availat	ble:						
Rem	Remarks: Soil saturation to the surface satisfies the wetland hydrology criterion.													

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

Project Site:	ELST - S	outh S	ammamish Seg	ment		City	//County:	Sam	namis	h/King	Sampling Da	ate:		<u>5-13</u>	
Applicant/Owner:	King Cou	nty								State: WA	Sampling Po	oint:	<u>W23</u> (rev)	A-SP	<u>1</u>
Investigator(s):	C. Worsle	ey; M. I	Maynard					Se	ction,	Township, Rang	je: <u>S06, T24</u>	4N, R06E			
Landform (hillslope, ter	rrace, etc.)): <u>sl</u>	lope			Local relief	(concave	, conve	x, non	e): <u>convex</u>		Slope	: (%):	<u>2</u>	
Subregion (LRR):	<u>A</u>			La	ıt:			Long:		_	[Datum:			
Soil Map Unit Name:	Alderwo	od gra	velly sandy loar	n, 15 t	to 30% slopes					NWI class	sification:	PEM			
Are climatic / hydrologi	c conditio	ns on t	he site typical fo	r this	time of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	significantly dis	turbed?	Are "Nor	mal Cir	cumst	ances" present?		Yes	\boxtimes	No	
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	naturally proble	matic?	(If neede	ed, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
				~ ′					

Remarks: Sample plot is located at northern end of wetland, approximately 8 feet east of trail, 3 feet east of dtich, and 20 feet south of wood stairs.

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot size: <u>NA</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test Worksheet:	
1 2				Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u>	(A)
3				Total Number of Dominant 5 Species Across All Strata: 5	(B)
50% =, 20% =		= Total Cove	er	Percent of Dominant Species	(A/B)
Sapling/Shrub Stratum (Plot size: 10 feet)				That Are OBL, FACW, or FAC:	()
1. <u>Rosa pisocarpa</u>	<u>35</u>	<u>yes</u>	FAC	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x1 =	
4				FACW species x2 =	
5				FAC species x3 =	
50% =, 20% =	<u>35</u>	= Total Cove	er	FACU species x4 =	
Herb Stratum (Plot size: 3 feet)				UPL species x5 =	
1. <u>Scirpus microcarpus</u>	<u>20</u>	yes	<u>OBL</u>	Column Totals: (A) (E	B)
2. Athyrium cyclosorum (Athyrium filix-femina)	<u>25</u>	<u>yes</u>	FAC	Prevalence Index = B/A =	
3. Chamaenerion angustifolium (Epilobium a.)	<u>30</u>	yes	FACU	Hydrophytic Vegetation Indicators:	
4. Lotus corniculatus	<u>10</u>	no	FAC	1 – Rapid Test for Hydrophytic Vegetation	
5. <u>Phalaris arundinacea</u>	<u>10</u>	no	FACW	☑ 2 - Dominance Test is >50%	
6. Juncus effusus	<u>10</u>	no	FACW	□ 3 - Prevalence Index is $\leq 3.0^1$	
7. Polystichum munitum	<u>10</u>	no	FACU	4 - Morphological Adaptations ¹ (Provide supporting	
8. <u>Festuca rubra</u>	<u>10</u>	no	FAC	data in Remarks or on a separate sheet)	
9. <u>Veronica americana</u>	8	no	OBL	5 - Wetland Non-Vascular Plants ¹	
10. <u>Equisetum telmateia</u>	<u>5</u>	no	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)	
11. <u>Equisetum hyemale</u>	<u>2</u>	no	FACW		
50% = <u>70,</u> 20% = <u>28</u>	<u>140</u>	= Total Cove	er	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: 10 feet)				be present, unless disturbed of problematic.	
1. <u>Rubus armeniacus</u>	<u>15</u>	<u>yes</u>	FACU		
2. <u>Rubus ursinus</u>	<u>2</u>	<u>no</u>	FACU	Hydrophytic	_
50% = <u>8</u> , 20% = <u>3</u>	<u>15</u>	= Total Cove	er	Vegetation Yes 🛛 No Present?	
% Bare Ground in Herb Stratum 0					

hydrophytic vegetation criterion.

Project Site: ELST - South Sammamish

SOIL

SOIL								Sampling Point:	N23A-SP1	(rev)	
Profile Desc	ription: (Describe t	o the depth	n needed to d	ocument the ind	licator or confir	m the absence	e of indicate	ors.)			
Depth	Matrix			Redox	Features						
(inches)	Color (moist)	%	Color (mo	oist) %	Type ¹	Loc ²	Texture		Remarks	S	
<u>0-10</u>	<u>10YR 2/1</u>	100	<u>-</u>		<u> </u>	-	gr. sa. lo	am			
<u>10-18</u>	<u>2.5Y 3/1</u>	<u>98</u>	<u>10YR 4/</u>	<u>6 2</u>	<u>C</u>	M	<u>gr. sa. lo</u>	<u>am</u>			
								. <u> </u>			
		<u> </u>									
		<u> </u>									
		<u> </u>									
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix											
Hydric Soil	ndicators: (Applica	ble to all L	RRs, unless o	otherwise noted	.)		Indic	cators for Problemat	ic Hydric S	ioils³:	
Histoso	ol (A1)			Sandy Redox (S	S5)			2 cm Muck (A10)			
Histic E	Epipedon (A2)			Stripped Matrix	(S6)			Red Parent Materia	al (TF2)		
Black I	Histic (A3)			Loamy Mucky N	/lineral (F1) (exc	ept MLRA 1)		Very Shallow Dark	Surface (T	F12)	
Hydrog	gen Sulfide (A4)			Loamy Gleyed	Matrix (F2)		\boxtimes	Other (Explain in R	emarks)		
Deplet	ed Below Dark Surfa	ce (A11)		Depleted Matrix	(F3)						
Thick [Dark Surface (A12)			Redox Dark Su	rface (F6)						
Sandy	Mucky Mineral (S1)			Depleted Dark	Surface (F7)			cators of hydrophytic etland hydrology mus			
□ Sandy	Gleyed Matrix (S4)			Redox Depress	ions (F8)			nless disturbed or pro		ι,	
Restrictive I	_ayer (if present):										
Type:											
Depth (inche	s):					Hydric Soils P	Present?	Yes		No	
Remarks:	The presence of hy	drophytic ve	egetation and	wetland hydrolog	y, and a dark ma	atrix with redox	consentratio	ons, indicate the hydri	soil criteri	on is satis	fied.

HYDROLOGY

Wetla	and Hydrology Indicat	ors:												
Prima	ary Indicators (minimum	of one re	equired	; check	all that	t apply)			Sec	ondary Indicators (2 or r	more requir	ed)		
	Surface Water (A1)					Water-Stained Leave	es (B9)			Water-Stained Leaves	s (B9)			
	High Water Table (A2))				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)		Drainage Patterns (B10)						
	Water Marks (B1)					Aquatic Invertebrates (B13)				Dry-Season Water Ta	ble (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Odor (C1)				Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizosphere	es along Living Roots	s (C3)		Geomorphic Position	(D2)			
	Algal Mat or Crust (B4)									Shallow Aquitard (D3)	1			
Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neu									FAC-Neutral Test (D5)				
	Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A)									Raised Ant Mounds (D6) (LRR A)				
	Inundation Visible on Aerial Imagery (B7)								Frost-Heave Hummoo	ks (D7)				
Sparsely Vegetated Concave Surface (B8)														
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):								
	ation Present? des capillary fringe)	Yes	\boxtimes	No		Depth (inches):	<u>9</u>	Wetlan	d Hyd	drology Present?	Yes	\boxtimes	No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:														
Rema	Remarks: Soil saturation in the upper 12 inches satisfies the wetland hydrology criterion.													

Data Plot #:

Wetland:

Upland near 23A

23A-SP2

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/7/200	7 Revisited 10-25-13
Applicant/Owner: King County		County:	King	
Investigator: Erik Christensen, Chip Maney		State:	WA	
□ 1987 Method	A St. Method			Community ID: Upland Herb
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 23A-SP2
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	х	

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 10 feet northeast of flag W23A-5.

VEGETATION (> Dominant species are checked) Plant Species Stratum Indicator % Cover 50 FAC Equisetum arvense н 1. Polystichum munitum Н FACU trace 2. FACU 90 Н Pteridium aquilinum З. Gaultheria shallon trace S FACU 4. Rosa pisocarpa 5 FAC S 5. FACU Rubus armeniacus 5 S 6. FACU Acer macrophyllum 20 т 7. -Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing 33

morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in R	emarks):	Wetland Hydrology Indicators (Describe in Remarks):							
Stream, Lake, or	Tide Gage	Primary Indicators:							
Aerial Photograph Other X No Recorded Dat		Inundated Saturated in Upper 12 inches Water Marks							
Field Observations:		Drift Lines Sediment Deposits Drainage Patterns in Wetlands							
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) 13 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)							
Remarks (As relevant, describ	e recent precipitation, hydro	ologic modifications, local variations, etc.):							

Saturation in the upper 12 inches satisfies wetland hydrology criterion.

						Data Plot #:	23A-SP2
						Wetland:	Upland near 23A
roject/Site	ELST Re-de	elineation		Date:	11/7/2007	Re	visited 10-25-13
SOIL Soil Surve	ey Data:						
Map Unit N	Name: Alderv	vood gravelly sandy lo	am 15 to 30% slop	oes	Drainage Clas	ss: Moderately	well drained
					Field Observa	ations Confirm I	Vapped Type?
Taxonomy	(Subgroup):	Entic Durochrepts			Yes	No X I	NA
-	scription:						
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Mois	it)	Mottle Abundance/C		Texture, Concretions, Rhizospheres, etc.
0-12	Α	10YR 3/2	5YR 4/6		few, fine, promin	ent g	gravelly sandy loam
12-16	В	10YR 3/1	5YR 4/6		few, fine, promin	ent g	gravelly sandy loam
Hi Hi Su Ac Re X GI	educing Condit leyed or Low-C gh Organic Co			Fe/N Orga X Mott	ed on Hydric Soil In Concretions anic Streaking in les (Redoximorp er (Explain in Re	Sandy Soils Shic Features)	
		imorphic features indi					
WETLA		MINATION		X	lo th	is Sampling P	oint Within a Watland
	tic Vegetation ils Present?		Yes No	<u> </u>	is th	ns Samping P	oint Within a Wetland?
•			Yes <u>X</u> No			Yes	No X
wetland H	lydrology Pres	sent?	Yes <u>No</u>	X			

Remarks

Hydrophytic vegetation and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

			[Data Plot #:	23B-SP1						
			١	Vetland:	23B						
WETLAN		ERMINATIO	N								
(Modified from: 1987 A	COF We	tlands Deli	ineation I	Manual)							
Project/Site: ELST Re-delineation		Date: 10/31/2007 Revisited 09-20-13									
Applicant/Owner: King County		County: Kir	ng County								
Investigator: Michael Muscari/Laura Brock		State: WA	4								
□ 1987 Method	Method		Comr	nunity ID: P	EM 09-20-13 - PSS						
Do Normal Circumstances exist on the site? Y	es <u>X</u>	No	- Field	Plot ID: 23B	-SP1						
Is the site significantly disturbed (Atypical Situation)? Y	es	No X			<u> </u>						
Is the area a potential Problem Area? Y	es	No X									
Remarks (Explain sample location, disturbances, problem											
Sample plot showed hydro at bottom slope, we assumed slo	,	dro based on w	vetland desc	cription. This s	ample plot is located						
approximately 10' west of flag 23B-3.	p =										
09-20-13 Observations - Observed from trail.											
				00 00 40 0	haamsetiana						
VEGETATION (> Dominant species are checked)					bservations ix-femina 20%						
Plant Species	% Cov	er Stratum	Indicator		arvense 30%						
✓ 1. Athyrium filix-femina	20	Herb	FAC		hyemale 10%						
✓ 2. Equisetum arvense	30	Herb	FAC		(yellow?) 5%						
3. Equisetum hyemale	10	Herb	FACW		culatus 30%						
4 loosestrife (yellow?)	5	Herb	FACW		crocarpus 20%						
✓ 5. Lotus corniculatus	30	Herb	FAC	 Alnus rubra Fraxinus lat 							
✓ 6. Scirpus microcarpus	20	Herb OBL			Isamifera 30%						
7 Alnus rubra (5' tall)	5	Shrub	FAC	Thuja plicat							
8 Fraxinus latifolia (5' tall)	10	Shrub	FACW								
9 Populus balsamifera (5' tall)	10			-							
	10	Shrub	FAC								

Percent of **Dominant Species** that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

 $\label{eq:resonance} \textbf{Remarks} \hspace{0.1 in} (\text{Describe disturbances, relevant local variations, seasonal effects, etc.}):$

Somewhat undisturbed PEM on "bench" next to lake. The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

100

HYDROLOGY	
Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available	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
Depth of Surface Water: none (in.) Depth to Free Water in Pit: 11 (in.) Depth to Saturated Soil: surface (in.) Remarks (As relevant, describe recent precipitation, hydrologic Saturation to the surface satisfies wetland hydrology criterion.	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks) modifications, local variations, etc.):

						Data Plot #: Wetland:	23B-SP1	
							23B	
Project/Site: ELST Re-delineation					10/31/2007	Revi	isited 09-20-13	
OIL oil Surv	ey Data:							
	-	vood gravelly sandy lo	am, 6 to 15 % slopes	5	Drainage Class	: Moderately w	vell drained	
					Field Observat	-		
	(Cubaraun)	Entia Duranhranta					Δ	
	(Subgroup):	Entic Durochrepts			Yes N	lo <u>X</u> N/	A	
	scription:	Matrix Calar	Mattle Caler		Mattle	т.	uture Consertions	
epth nches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co		exture, Concretions, nizospheres, etc.	
-10	A	10YR 2/1	none		none	mı	ucky loam	
0-16	B	2.5YR 4/1	none		none	gra	avelly sand	
•	oil Indicators:			Liata	d an Lludria Caila	Liet		
Histosol Histic Epipedon					Listed on Hydric Soils List Fe/Mn Concretions			
X Sulfidic Odor					Organic Streaking in Sandy Soils			
Aquic or Peraguic Moisture Regime					Mottles (Redoximorphic Features)			
Reducing Conditions					r (Explain in Rem	arks)		
X G	leyed or Low-C	hroma Colors						
X Hi	igh Organic Co	ntent in Surface Layer						
lemarks	(Describe soil	disturbances, local var	iations, etc.):					
Many und	ecomposed pla	ant parts. A low chroma	of 1 indicates hydrid	c soil.				
WETLA	ND DETER	MINATION						
Hydrophytic Vegetation Present?YesXNo					Is this Sampling Point Within a Wetland?			
Hydric So	ils Present?	Y	es <u>X</u> No			Yes X	No	
		_				103 /		

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes <u>X</u> No

Data Plot #: 23B-SP2

Wetland:

Upland near 23B

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	10/31/200)7 F	Revisited 09-20-13	
Applicant/Owner: King County		County:	King Co			
Investigator: Michael Muscari/Laura Brock		State:	WA			
□ 1987 Method	A St. Method			Community ID:	: Upland Shrub	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID:	23B-SP2	
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х			
Is the area a potential Problem Area?	Yes	No	Х			
Remarks (Explain sample location, disturbances, prob	olem areas):					

This sample plot is located approximatly 10' southeast of flag 3.

09-20-13 Observations - Observed from trail.

VE	GE	TATION (✓Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	09-20-13 Observations Convolvulus spp. 10% Equisetum hyemale 20% Equisetum telmateia 15%
~	2.	Convolvulus spp.	20	Herb	NL	Fraxinus latifolia 5%
~	З.	Equisetum hyemale	30	Herb	FACW	Rosa pisocarpa 10%
	4.	Equisetum telmateia	15	Herb	FACW	Rubus armeniacus 70%
	5.	Fraxinus latifolia	5	Shrub	FACW	 Rubus ursinus 30% Thuja plicata 5%
	6.	Rosa pisocarpa	10	Shrub	FAC	
~	7.	Rubus armeniacus	70	Shrub	FACU	-
~	8.	Rubus ursinus	30	Shrub	FACU	-
-	rcent cept	of Dominant Species that are OBL, FACW, or F FAC-). Include species noted (*) as showing	AC 50			-

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

Equisetum hyemale, Rubus armeniacus, Rubus ursinus dominate upland vegetation in the vicinity of the plot. Rubus parviflorus, bracken fern, sword fern are also present along upland boundary. The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrole <i>No primary or secondary indicators of hydrology are present.</i>	

							Data	Plot #:	23B-SP2	
							Wetla	nd:	Upland near 23B	
Project/Site	e: ELST Re-de	elineation			Date:	10/31/2007		Revi	sited 09-20-13	
SOIL Soil Surv	ey Data:									
Map Unit	Name: Alderv	wood gravelly sand	ly loam 6 t	o 15% slope:	8	Drainage Cl	ass: Mode	erately w	ell drained	
						Field Obser	vations Co	nfirm Ma	apped Type?	
Taxonomy	y (Subgroup):	Entic Durochrept	S			Yes	No	<u>x</u> N/	A	
Profile De	escription:									
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		ottle Color lunsell Moist))	Mottle Abundance	Contrast		xture, Concretions, izospheres, etc.	
0-10	A	10YR 2/1	no	ne		none		gra	avelly sandy loam	
10-16	В	10YR 4/3	no							
				ne		none		sa	ndy loam	
Hydric So H H H S A A G H	educing Condit ileyed or Low-C igh Organic Co	ic Moisture Regime tions Chroma Colors ontent in Surface La	e ayer		Fe/M Orga Mottl	d on Hydric S n Concretions nic Streaking es (Redoximo r (Explain in F	s in Sandy S orphic Feat	Goils	ndy loam	
Hydric So Hydric So H H S A A R G H Remarks	istosol istic Epipedon ulfidic Odor quic or Peragui educing Condit ileyed or Low-C igh Organic Co (Describe soil	ic Moisture Regime tions Chroma Colors	e ayer Il variation:	 s, etc.):	Fe/M Orga Mottl Othe	d on Hydric S n Concretions nic Streaking es (Redoximo	s in Sandy S orphic Feat	Goils	ndy loam	
Hydric So H H S A A R G H R Remarks No indicat	istosol istic Epipedon ulfidic Odor quic or Peragui educing Condit ileyed or Low-C igh Organic Co (Describe soil	ic Moisture Regime tions Chroma Colors ontent in Surface La disturbances, loca <i>oil were present. H</i>	e ayer Il variation:	 s, etc.):	Fe/M Orga Mottl Othe	d on Hydric S n Concretions nic Streaking es (Redoximo	s in Sandy S orphic Feat	Goils	ndy loam	
Hydric So H H S A A R G H Remarks No indicat	istosol istic Epipedon ulfidic Odor quic or Peragui educing Condit ileyed or Low-C igh Organic Co (Describe soil <i>tors of hydric so</i>	ic Moisture Regime tions Chroma Colors ontent in Surface La disturbances, loca <i>oil were present. H</i>	e ayer Il variation:	 s, etc.):	Fe/M Orga Mottl Othe	d on Hydric S n Concretions nic Streaking es (Redoximo r (Explain in F	s in Sandy S rphic Feat Remarks)	Goils ures)	ndy loam	
Hydric So H H S A A A A A A A A A A A A A A A A A	istosol istic Epipedon ulfidic Odor quic or Peragui educing Condit ileyed or Low-C igh Organic Co (Describe soil tors of hydric so	ic Moisture Regime tions Chroma Colors ontent in Surface La disturbances, loca <i>oil were present. H</i>	e ayer Il variation: <i>lydric soil d</i>	s, etc.):	Fe/M Orga Mottl Othe	d on Hydric S n Concretions nic Streaking es (Redoximo r (Explain in F	s in Sandy S rphic Feat Remarks)	Goils ures)		

Remarks

Hydrophytic vegetation, wetland hydrology, and wetland soil criteria are not satisfied. The sample plot is not located in a wetland.

				Wetland: 23C
WET	LAND DE	TERMIN	ATION	
(Modified from: 198	B7 ACOE \	Netlands	Deline	ation Manual)
Project/Site: ELST Re-delineation		Date:	11/7/200	Revisited 09-20-13
Applicant/Owner: King County		County	King	
Investigator: Erik Christensen, Chip Maney		State:	WA	
□ 1987 Method	A St. Method	Ł		Community ID: PSS
Do Normal Circumstances exist on the site?	Yes X	<u>No</u>		Field Plot ID: 23C-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes	No	X	
Is the area a potential Problem Area?	Yes	No	х	
Remarks (Explain sample location, disturbances, pro <i>This sample plot is located 5 feet west of flag W23C-2</i>	,	north of a ch	erry tree.	

Data Plot #:

23C-SP1

VE	GET	FATION (> Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	09-20-13 Observations Athyrium filix-femina 70% Lonicera involucrata 50%
~	1.	Athyrium filix-femina	70	н	FAC	Rubus armeniacus 30%
~	2.	Lonicera involucrata	20	S	FAC	Rubus spectabilis 15%
	3.	Rubus armeniacus	15	S	FACU	
~	4.	Rubus spectabilis	30	S	FAC+	
(exe	cept F	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing ogical adaptations to wetlands. "T" indicates trace.	100			

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

A Prunus sp. was rooted outside of the wetland but was over hanging to provide 15 percent cover. The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in F	lemarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or	Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Dai		Inundated X Saturated in Upper 12 inches Water Marks
Field Observations:		Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (12 (9 (Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, descri	be recent precipi	n, hydrologic modifications, local variations, etc.):

Saturation in the upper 12 inches satisfies wetland hydrology criterion.

09-20-13 Observations - No saturation. Standing water in trail-side ditch.

						Data Plot #:		23C-SP1
						Wetland:		23C
Project/Site	: ELST Re-de	elineation		Date:	11/7/2007	٦	Revisit	ted 09-20-13
SOIL								
Soil Surve	ey Data:							
Map Unit N	lame: Alderv	vood gravelly sandy loa	n 6 to 15% slo	pes	Drainage Class	3: Moderate	ely we	ll drained
					Field Observati	ions Confirm	n Map	pped Type?
Taxonomy	(Subgroup):	Entic Durochrepts			Yes N	lo <u>X</u>	NA	
Profile De	scription:							
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Mo		Mottle Abundance/Co	ntrast		ure, Concretions, cospheres, etc.
0-11	A	10YR 2/1	none		none		loam	I
11-18	В	5Y 4/1	7.5YR 4/6		common, medium	, prominent	loam	iy clay <mark>09-20-13</mark> - clay loam
Hii Hii Su Ac Re X GI Hii Remarks	educing Condit eyed or Low-C gh Organic Co (Describe soil		. ,	Fe/M Orga Mottl Othe 09-20-13 Ob woody matter	d on Hydric Soils In Concretions Inic Streaking in S es (Redoximorph r (Explain in Rem bservations - Dis er and gravel in Ic	Sandy Soils nic Features narks) sturbed soil.)	on/partially decomposed
		MINATION						
	ic Vegetation		s X No	0	ls thi	s Sampling	Poin	t Within a Wetland?
	ils Present?	Ye			15 (11)			
•	ydrology Pres					Yes X	N	lo
	,			-				

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 23C-SP2

Wetland:

Upland near 23C

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/7/2007	,	Revisited 09-20-13	
Applicant/Owner: King County		County:	King			
Investigator: Erik Christensen, Chip Maney		State:	WA			
□ 1987 Method	Method			Community ID	: Upland Forest	
Do Normal Circumstances exist on the site? Ye	es <u>X</u>	No		Field Plot ID:	23C-SP2	
Is the site significantly disturbed (Atypical Situation)? Ye	es	No	Х			
Is the area a potential Problem Area? Ye	es	No	Х			

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located 15 feet south/southwest of flag W23C-1 and 12 feet north/northeast of the largest cherry tree.

VE	GET	ATION (> Dominant species are checked)			
		Plant Species	% Cover	Stratum	Indicator
	1.	Equisetum telmateia	15	Н	FACW
	2.	Polystichum munitum	10	Н	FACU
~	3.	Rubus armeniacus	90	S	FACU
~	4.	Prunus spp.	66	Т	
(exc	cept F	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing ogical adaptations to wetlands. "T" indicates trace.	0		

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Re	emarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or 1	Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Field Observations:		Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) 14 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describ	e recent precipitation, hydro	ologic modifications, local variations, etc.):

No indicators of wetland hydrology present. Hydric soil criteria is not satisfied.

						Data Plot	#: <u>23C-SP2</u>
						Wetland:	Upland near 23C
roject/Site	e: ELST Re-de	elineation		Date:	11/7/2007	R	Revisited 09-20-13
SOIL							
Soil Surv	ey Data:						
		wood gravelly sandy lo	am 6 to 15% slopes		Drainage Clas	s: Moderate	ly well drained
							Mapped Type?
F	(O , b						
-	/ (Subgroup):	Entic Durochrepts			Yes	No <u>X</u>	NA
	escription:	Matrix Calar	Mattle Oale		Mattle		Testure Conservations
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/C	ontrast	Texture, Concretions, Rhizospheres, etc.
0-9	A	10YR 2/1	none		none		loam
9-18	В	5Y 4/1	10YR 4/6		medium, commo	n, prominent	sandy loam
H H S A A X G H Remarks	educing Condit leyed or Low-C igh Organic Co (Describe soil		riations, etc.):	Fe/M Orga K Mott Othe	ed on Hydric Soil In Concretions anic Streaking in les (Redoximorp er (Explain in Rei rdric soils.	Sandy Soils hic Features))
		-					
WETLA	ND DETER	MINATION					
Hydrophy	tic Vegetation	Present?	Yes No	Х	Is th	is Sampling	Point Within a Wetland?
Hydric So	ils Present?	Ň	Yes <u>X</u> No			Yes	No X
Wetland H	Hydrology Pres	sent?	Yes No	Х			

Remarks

Hydrophytic vegetation and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

Data Plot #: 24A-SP1 Wetland: 24A WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/7/200	7 Revisited 09-20-13
Applicant/Owner: King County		County:	King	
Investigator: Chip Maney		State:	WA	
□ 1987 Method	7 WA St. Method			Community ID: PSS
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 24A-SP1
Is the site significantly disturbed (Atypical Situation)? Yes	No	x	
Is the area a potential Problem Area?	Yes	No	Х	

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located 30 feet east from flag W24A-2 and 10 feet into a willow thicket. No location of upland plot is available for the wetland.

VEGETATION (> Dominant species are checked) Indicator **Plant Species** % Cover Stratum Equisetum telmateia FACW 5 н 1. Glyceria striata 5 Н OBL 2. Н FACW Phalaris arundinacea trace 3. Cornus sericea 20 S FACW 4. Rubus armeniacus FACU 2 S 5. FAC 100 Salix scouleriana S 6. Alnus rubra 10 FAC т 7. Percent of Dominant Species that are OBL, FACW, or FAC 100

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):					
Stream, Lake, or Tide Gage	Primary Indicators:					
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands					
Depth of Surface Water:none(in.)Depth to Free Water in Pit:13(in.)Depth to Saturated Soil:4(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)					

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): Saturation in the upper 12 inches satisfies wetland hydrology criterion.

09-20-13 Observations - Shallow inundation.

						Data Plot #: Wetland:	24A-SP1 24A
roject/Site	e: <u>ELST Re-de</u>	elineation		Date:	11/7/2007	Re	visited 09-20-13
SOIL Soil Surv	ey Data:						
Map Unit I	Name: Seattle	e muck			Drainage Clas	s: very poorly	drained
							Mapped Type?
Taxonomy	(Subgroup):	Typic Medihemists			Yes I	No <u>X</u>	NA
Profile De	escription:						
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co		Texture, Concretions, Rhizospheres, etc.
0-12	A	10YR 2/1	none		none		silt loam
12-18	A2	10YR 3/1	none		none	:	sandy loam
H H Si Ai Ai Ai R H Remarks	educing Condit leyed or Low-C igh Organic Co	hroma Colors ntent in Surface Layer disturbances, local va		Fe/M Orga Mottl	d on Hydric Soils In Concretions Inic Streaking in les (Redoximorpi r (Explain in Rer	Sandy Soils hic Features)	
WETLA		MINATION					
	tic Vegetation		′es X No		Is thi	is Sampling F	Point Within a Wetland?
	ils Present?		es X No				
-			· · · · · · · · · · · · · · · ·			Yes X	No

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 24B-SP1 24B

Wetland:

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/2/200	Revisited 09-25-13
Applicant/Owner: King County			King C	ounty
Investigator: Linda Krippner/Rachel Hulscher		State:	WA	
□ 1987 Method	WA St. Method			Community ID: PFO
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 24B-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	Х	

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 10 feet northeast of Flag 24B-5.

				09-25-13 Observations
VEGETATION (Dominant species are checked)	a/ a	.		Equisetum telmateia 30%
Plant Species	% Cover	Stratum	Indicator	Phalaris arundinacea 5%
✓ 1. Equisetum telmateia	30	Herb	FACW	Urtica dioica 40%
✓ 2. Phalaris arundinacea	50	Herb	FACW	Fraxinus latifolia 2%
✓ 3. Urtica dioica	40	Herb	FAC+	Rubus armeniacus 40% Rubus spectabilis 10%
4 Fraxinus latifolia	2	Shrub	FACW	Alnus rubra 5%
✓ 5. Rubus armeniacus	40	Shrub	FACU	Salix sepulcralis (fallen branches) 40%
6. Rubus spectabilis	10	Shrub	FAC+	Populus balsamifera 5%
7. Alnus rubra	5	Tree	FAC	Calystegia sepium 40%
✓ 8. Salix sepulcralis	70	Tree	FAC+	
 (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. Remarks (Describe disturbances, relevant local variations, se The percent of dominant species that are hydrophytic is greated. 		. ,	trees in vicin and other co	,
HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage		land Hydro Primary Inc		ors (Describe in Remarks):
Aerial Photograph Other X No Recorded Data Available Field Observations:		X	Water Mark Drift Lines Sediment I	-
Depth of Surface Water: none (in.) Depth to Free Water in Pit: none (in.) Depth to Saturated Soil: 10 (in.) Remarks (As relevant, describe recent precipitation, hydrolo			Oxidized R Water-Stain Local Soil S Other (Exp	or more required): hizospheres in Upper 12 inches ned Leaves Survey Data lain in Remarks) oto):

Soil saturation in the upper 12 inches satisfies wetland hydrology criterion. A ponded area is located approximately 25 feet to the southwest.

09-25-13 Observations - No saturated soils to at least 20 inches below the surface.

								Dut	a Plot #:	24B-SP1
								Wet	tland:	24B
roject/Site	: ELST Re-de	alineation				Date:	11/2/2007	7	Rev	risited 09-25-13
-		eineation				Dale.	11/2/2007			
SOIL Soil Surve	ey Data:									
/lap Unit M	Name: Norma	a Sandy Loam					Drainage	Class: Po	orly drain	ed
							Field Obse	ervations (Confirm N	lapped Type?
axonomy	(Subgroup):	Fluventic Humaqu	iepts				Yes	No	<u>X</u> N	IA
rofile De	scription:									
Depth Inches)	Horizon Designation	Matrix Color (Munsell Moist)		Mottle ((Munse	Color II Moist)		Mottle Abundanc	e/Contras		exture, Concretions, hizospheres, etc.
-16	А	10YR 2/1		none			none		si	ilt Ioam
Hi Hi Su Au Re X Gi Hi	educing Conditi leyed or Low-C gh Organic Co	hroma Colors ntent in Surface La	yer	nne oto		Fe/Mi Organ Mottle	d on Hydric n Concretio nic Streakin es (Redoxin r (Explain in	ns Ig in Sandy norphic Fe	atures)	
Hi Hi Su Ad X Gl Hi Remarks	stosol stic Epipedon ulfidic Odor quic or Peraguid educing Conditi leyed or Low-C gh Organic Col (Describe soil	ions hroma Colors	yer variatio	ons, etc):	Fe/Mi Organ Mottle	n Concretio nic Streakin es (Redoxin	ns Ig in Sandy norphic Fe	atures)	
Hi Hi Su Ad Re X Gi Hi Remarks	stosol stic Epipedon ulfidic Odor quic or Peraguid educing Conditi leyed or Low-C gh Organic Col (Describe soil	ions hroma Colors ntent in Surface La disturbances, local <i>ndicates hydric soil</i> s	yer variatio	ons, etc	.):	Fe/Mi Organ Mottle	n Concretio nic Streakin es (Redoxin	ns Ig in Sandy norphic Fe	atures)	
Hi Hi Su Ad Re X Gi Hi Remarks Low chron	stosol stic Epipedon ulfidic Odor quic or Peragui educing Conditi leyed or Low-C gh Organic Con (Describe soil <i>na soil matrix ir</i>	ions hroma Colors ntent in Surface La disturbances, local ndicates hydric soils	yer variatio	ons, etc): No	Fe/Mi Organ Mottle	n Concretio nic Streakin es (Redoxin r (Explain in	ns g in Sandy norphic Fe Remarks)	atures)	oint Within a Wetland?
Hi Hi Su Ad Re X Gi Hi Remarks Low chron	stosol stic Epipedon ulfidic Odor quic or Peraguir educing Conditi leyed or Low-C gh Organic Con (Describe soil na soil matrix ir	ions hroma Colors ntent in Surface La disturbances, local ndicates hydric soils	yer variatic s.			Fe/Mi Organ Mottle	n Concretio nic Streakin es (Redoxin r (Explain in	ns g in Sandy norphic Fe Remarks)	npling Po	pint Within a Wetland?

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 24B-SP2

Wetland:

Upland near 24B

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/2/200	7	Revisited 09-25-13	
Applicant/Owner: King County			King C			
Investigator: Linda Krippner/Rachel Hulscher		State:	WA			
□ 1987 Method	WA St. Method			Community ID	: Upland Forest	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID:	24B-SP2	
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х			
Is the area a potential Problem Area?	Yes	No	Х			

Remarks (Explain sample location, disturbances, problem areas):

A large pond is located just east of Pine Lake Creek area, overall topography is sloped toward Lake Sammamish. This sample plot is located approximately 15 feet east of Flag 24B-6.

VE	GE	TATION (✓Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	09-25-13 Observations Equisetum telmateia 20% Phalaris arundinacea 40%	
~	1.	Equisetum telmateia	30	Herb	FACW	Physocarpus capitatus 30%	
~	2.	Phalaris arundinacea	40	Herb	FACW	Rubus armeniacus 50%	
~	3.	Physocarpus capitatus	30	Shrub	FACW-	Rubus parviflorus 20%	
~	4.	Rubus armeniacus	50	Shrub	FACU	Alnus rubra 50%	
~	5.	Rubus parviflorus	20	Shrub	FAC-	Populus balsamifera 20% Corylus cornuta 30%	
~	6.	Alnus rubra	50	Tree	FAC	Symphoricarpos albus 20%	
~	7.	Populus balsamifera	20	Tree	FAC	Urtica dioica 10%	
Percent of Dominant Species that are OBL, FACW, or FAC							

morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrological describer and hydrological description describer and hydrological description describer and hydrological description des	ogic modifications, local variations, etc.):

Soils are dry. No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

09-25-13 Observations - No saturated soils to at least 18 inches below the surface.

						Data Pl	ot #:	24B-SP2
						Wetland	d:	Upland near 24B
Project/Site	ELST Re-de	elineation		Date:	11/2/2007		Revis	sited 09-25-13
SOIL Soil Surv	ey Data:							
Map Unit I	Name: Seattle	e muck			Drainage Cla	ass: very po	oorly di	ained
					Field Observ	ations Conf	irm Ma	apped Type?
Taxonomy	(Subgroup):	Typic Medihemists			Yes	No X	NA	\
Profile De	scription:							
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/0	Contrast		xture, Concretions, izospheres, etc.
0-12	А	10YR 2/2	none		none		silt	loam
12-16	В	10YR 5/2	none		none		silt	loam
Hi Hi Si Ad Ri G Hi	educing Condit leyed or Low-C gh Organic Co			Fe/M Orga Mott	d on Hydric So In Concretions unic Streaking in les (Redoximor er (Explain in Re	n Sandy So phic Featur		
No hydric	soil indicators	are present. Hydric so	il criterion is not sa	tisfied.				
	ND DETER		_					
	tic Vegetation	Present?	′es <u>X</u> No		ls t	his Sampli	ng Poi	nt Within a Wetland
Hydric So	ils Present?	Y	′es No	Х		Yes		No X
Wetland H	lydrology Pres	sent?	′es <u>N</u> o	Х				

Remarks

Hydric soil and wetland hydrology criteria are not met. Therefore, the sample plot is not located in a wetland.

Data Plot #:	24C-SP1
Wetland:	24C

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation			Date:	11/7/200	7 Re	Revisited 09-25-13		
Applicant/Owner: King County			County:	King				
Investigator: Matt Maynard			State:	WA				
1987 Method	🖌 1997 WA Si	t. Method			Community ID:	PSS	09-25-13	- PEM
Do Normal Circumstances exist on the sit	e?	Yes X	No		Field Plot ID: 2	4C-SP1		
Is the site significantly disturbed (Atypical	Situation)?	Yes	No	Х				
Is the area a potential Problem Area?	Y	Yes	No	х				
Remarks (Explain sample location, distu	rbances, problem	n areas):						

This sample plot is located 8 feet northeast of flag W24C-14.

VE	GE	TATION (VDominant species are checked)			
		Plant Species	% Cover	Stratum	Indicator
	1.	Equisetum telmateia	15	Н	FACW
~	2.	Phalaris arundinacea	90	Н	FACW
	З.	Solanum dulcamara	5	Н	FAC+
~	4.	Rubus armeniacus	50	S	FACU
	rcent cept	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing	C 50		

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

Due to wetland hydrology and hydric soil observed at the sample plot, Rubus armeniacus is believed to be growing hydrophytically. Therefore, hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:11(in.)Depth to Saturated Soil:surface(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrolo	
Saturation in the upper 12 inches satisfies wetland hydrology	criterion.

						Data Plot #:	24C-SP1
						Wetland:	24C
Project/Site	e: ELST Re-de	elineation		Date:	11/7/2007	Rev	visited 09-25-13
SOIL							
Soil Surv	ey Data:						
Map Unit	Name: Seattl	e muck			Drainage Class	s: very poorly	drained
					Field Observat	ions Confirm N	Mapped Type?
Taxonom	y (Subgroup):	Typic Medihemists			Yes N	lo X N	NA
	escription:						
Depth	Horizon	Matrix Color	Mottle Color		Mottle	т	Fexture, Concretions,
(Inches)	Designation	(Munsell Moist)	(Munsell Moist)		Abundance/Co		Rhizospheres, etc.
0-6	А	10YR 2/1	none		none	h	oam
6-10	B1	10YR 3/1	none		none	ç	gravelly sandy loam
10-16	B2	10YR 4/2	none		none	Ç	gravelly sandy loam
16-18	С	10YR 5/1	10YR 5/6		common, medium	, prominent	silt
Hydric So	oil Indicators:						
Н	istosol			Liste	d on Hydric Soils	List	
—— н	istic Epipedon				In Concretions		
s	ulfidic Odor			Orga	nic Streaking in S	Sandy Soils	
A	quic or Peragui	ic Moisture Regime		Mott	les (Redoximorph	nic Features)	
R	educing Condit	tions		Othe	er (Explain in Rem	narks)	
X G	ileyed or Low-C	Chroma Colors					
н	igh Organic Co	ontent in Surface Laye	r				
Remarks	(Describe soil	disturbances, local va	riations, etc.):				
	soil indicate h						
WETLA	ND DETER	MINATION					
Hydrophy	tic Vegetation	Present?	Yes X No		Is thi	s Sampling P	oint Within a Wetland?
	oils Present?		Yes X No			Vee V	Ne
			· · · · · · · · ·			Yes X	No

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #:	24C-SP2
Wetland:	Upland n

Upland near 24C

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/7/2	2007	Revisited 09-25-13
Applicant/Owner: King County		County:	Kin	ıg	
Investigator: Chip Maney, Erik Christensen		State:	WA	A Contraction of the second seco	
□ 1987 Method	/lethod			Community I	D: Upland Forest
Do Normal Circumstances exist on the site? Yes	s <u>X</u>	No		Field Plot ID:	24C-SP2
Is the site significantly disturbed (Atypical Situation)? Yes	s	No	Х	. —	
Is the area a potential Problem Area? Yes	S	No	х	_	
Remarks (Explain sample location, disturbances, problem at	reas):	-		-	
This sample plot is located in a stand of alders approximately	5 feet nor	rth of flag	W24	C-11.	
		-			
VEGETATION (Dominant species are checked)	% Cove	r Stratu		Indicator	
Plant Species	/		m		
I. Rubus armeniacus	90 90	<u>s</u> т		FACU	
✓ 2. Alnus rubra	90	!		FAG	
Percent of Dominant Species that are OBL, FACW, or FA					
(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.	50				
Remarks (Describe disturbances, relevant local variations, s	seasonal e	effects, ef	tc.):		
			,		
The percent of dominant species that are hydrophytic is not g	reater tha	n 50 perc	,	Hydrophytic vegeta	tion criterion is not satisfied.
, , , , , , , , , , , , , , , , , , ,	reater tha	n 50 perc	,	Hydrophytic vegeta	tion criterion is not satisfied.
The percent of dominant species that are hydrophytic is not g			cent. I		tion criterion is not satisfied.
The percent of dominant species that are hydrophytic is not g			vent. I ydrole	ogy Indicators (
The percent of dominant species that are hydrophytic is not g HYDROLOGY Recorded Data (Describe in Remarks):		etland H	vent. I ydrole	ogy Indicators (

Recorded Data (Describe in R Stream, Lake, or	,	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Dat Field Observations:		Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) none (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.*

							Data Plot #:	24C-SP2
							Wetland:	Upland near 24C
roject/Site	e: ELST Re-de	elineation			Date:	11/7/2007	Revi	sited 09-25-13
SOIL Soil Surv	ey Data:							
Map Unit I	Name: Kitsap	Silt Loam 2 to 8% s	lopes			Drainage Cla	ss: Moderately v	vell drained
						Field Observa	ations Confirm M	apped Type?
Taxonomy	(Subgroup):	Dystric Xerochrepts				Yes	No X N	Α
-	escription:	Byothe Mereonepic					<u> </u>	
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		le Color isell Moist)		Mottle Abundance/C		exture, Concretions, hizospheres, etc.
0-8	A	10YR 2/2	none			none	gr	avelly loam
8-16	В	10YR 5/2	7.5YF	3 5/6		few, fine, promin	nent lo	am
Hi Hi Si Ad Ri G Hi Remarks	educing Condit leyed or Low-C igh Organic Co (Describe soil		ariations,		Fe/M Orga X Mott	d on Hydric Soi In Concretions nic Streaking ir es (Redoximor r (Explain in Re	n Sandy Soils phic Features)	
			Vee	Na	X	1	nio Compling Da	int Within a Watlanda
	tic Vegetation	Present?	Yes	No	X	is ti	his Sampling Po	oint Within a Wetland?
nyaric So	ils Present?		Yes X	No			Yes	No X

Remarks

Hydrophytic vegetation and wetland hydrology criteria are not satisfied. The sample plot is not located in a wetland.

Wetland Hydrology Present? Yes ____ No _X___

						Data Plot #: Wetland:	25A-SP1 25A
		DETE		TI ~ 1			23A
(Modified from: 198	87 ACC		llands	Dellr	neation	Manual)	
Project/Site: ELST Re-delineation			Date:	11/8/2	2007	Revis	sited 09-25-13
Applicant/Owner: King County			County:	King	g		
nvestigator: Chip Maney, Erik Christensen			State:	WA			
☐ 1987 Method	A St. Me	ethod			Com	munity ID: P	FO/PSS
Do Normal Circumstances exist on the site?	Yes	Х	No		Field	Plot ID: 25A	-SP1
s the site significantly disturbed (Atypical Situation)?	Yes		No	Х			-
s the area a potential Problem Area?	Yes		No	х			
emarks (Explain sample location, disturbances, prol	blem are	as):					
EGETATION (> Dominant species are checked Plant Species	i)	% Cover	r Stratu	m	Indicator		
		75	Н		FACW		
1. Phalaris arundinacea 2. Cornus sericea		20	s		FACW	_	
3. Lonicera involucrata		20	S		FAC	_	
· -· .		20 2	s s		FAC FACU	_	
 3. Lonicera involucrata 4. Rubus armeniacus 5. Salix lucida 	/ or FAC	2 50	_			-	
3. Lonicera involucrata 4. Rubus armeniacus 5. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. Remarks (Describe disturbances, relevant local varia)	race. ations, se	2 50 100 easonal e	S S	,	FACU FACW+		ion is satisfied.
A. Lonicera involucrata A. Rubus armeniacus S. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates th Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic in	race. ations, se	2 50 100 easonal e	S S	,	FACU FACW+	egetation criter	ion is satisfied.
 3. Lonicera involucrata A. Rubus armeniacus 5. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates the Remarks (Describe disturbances, relevant local varia). The percent of dominant species that are hydrophytic in HYDROLOGY 	race. ations, se	2 50 100 easonal e r than 50	S S offects, et	. Hydr	FACU FACW+ rophytic ve	-	
A. Lonicera involucrata A. Rubus armeniacus S. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates the Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic i HYDROLOGY Recorded Data (Describe in Remarks):	race. ations, se	2 50 100 easonal e r than 50	S S offects, et	. Hydr ydrolo	FACU FACW+ rophytic ve	-	<i>ion is satisfied.</i> be in Remarks):
A. Lonicera involucrata A. Rubus armeniacus S. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates the Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic i HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	race. ations, se	2 50 100 easonal e r than 50	s s offects, et opercent.	. Hydr ydrolo	FACU FACW+ rophytic ve	itors (Descri	
3. Lonicera involucrata 4. Rubus armeniacus 5. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates the Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic i HYDROLOGY Recorded Data (Describe in Remarks):	race. ations, se	2 50 100 easonal e r than 50	s s offects, et opercent.	ydrolo Indica	FACU FACW+ rophytic ve ogy Indica ators: Inundated	itors (Descri	be in Remarks):
3. Lonicera involucrata 4. Rubus armeniacus 5. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates the generative of dominant species that are hydrophytic in Remarks (Describe disturbances, relevant local varia) The percent of dominant species that are hydrophytic in HYDROLOGY Recorded Data (Describe in Remarks):	race. ations, se	2 50 100 easonal e r than 50	S S offects, et percent etland Hy Primary	ydrolo Indica	FACU FACW+ cophytic ve ators: Inundated Saturated Water Ma	ttors (Descri I in Upper 12 ir rks	be in Remarks):
Conternation involuerata Conternation Conternatin Conternation Conternation Conternation Conterna	race. ations, se	2 50 100 easonal e r than 50	S S offects, et percent etland Hy Primary	ydrolo Indica	FACU FACW+ cophytic ve ogy Indica ators: Inundated Saturated Water Ma Drift Lines	itors (Descri I in Upper 12 ir rks	be in Remarks):
A increase involucrata A increase involucrate A increase involucrate invol	race. ations, se	2 50 100 easonal e r than 50	S S offects, et percent etland Hy Primary	ydrolo Indica	FACU FACW+ rophytic ve ogy Indica ators: Inundated Saturated Water Ma Drift Lines Sediment	ttors (Descri I in Upper 12 ir rks S Deposits	be in Remarks): nches
A Conternation involuerata A Conternation involuerata A Rubus armeniacus 5 Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates the Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic i HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available Field Observations:	race. ations, se	2 50 100 easonal e <i>r than 50</i>	S S offects, et percent etland Hy Primary	ydrolo Indica	FACU FACW+ rophytic ve ogy Indica ators: Inundated Saturated Water Ma Drift Lines Sediment	itors (Descri I in Upper 12 ir rks	be in Remarks): nches
a. Lonicera involucrata 4. Rubus armeniacus 5. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates the state of dominant species that are hydrophytic in the percent of dominant species that are hydrophytic in the percent of dominant species that are hydrophytic in the percent of dominant species that are hydrophytic in the percent of dominant species that are hydrophytic in the percent of dominant species in Remarks): Context of the percent of dominant species that are hydrophytic in the percent of dominant species that are hydrophytic in the percent of dominant species that are hydrophytic in the percent of dominant species in Remarks): Context of the percent of dominant species in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available Field Observations: Depth of Surface Water: none (in.)	race. ations, se	2 50 100 easonal e <i>r than 50</i>	etland Hy X	ydrolc	FACU FACW+ rophytic ve ogy Indica ators: Inundated Saturated Water Ma Drift Lines Sediment Drainage	ttors (Descri I in Upper 12 ir rks S Deposits	be in Remarks): nches etlands
3. Lonicera involucrata 4. Rubus armeniacus 5. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates the state are hydrophytic in the percent of dominant species that are hydrophytic in the percent species the percent species the percent species that ar	race. ations, se	2 50 100 easonal e <i>r than 50</i>	etland Hy X	ydrolc Indica	FACU FACW+ F	ators (Descri i Upper 12 ir rks Deposits Patterns in Wo 2 or more requ Rhizospheres	be in Remarks): nches etlands uired):
a. Lonicera involucrata 4. Rubus armeniacus 5. Salix lucida Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates the state of dominant species that are hydrophytic i Remarks (Describe disturbances, relevant local varia) The percent of dominant species that are hydrophytic i HYDROLOGY Recorded Data (Describe in Remarks):	race. ations, se	2 50 100 easonal e <i>r than 50</i>	etland Hy X	ydrolc Indica	FACU FACW+ F	ators (Descri in Upper 12 ir rks Deposits Patterns in Wo 2 or more requ Rhizospheres ained Leaves	be in Remarks): nches etlands
A increase involucrata A increase involucrata involucrate invol	race. ations, se	2 50 100 easonal e <i>r than 50</i>	etland Hy X	Hydrolc ydrolc Indica	FACU FACW+ F	ators (Descri i Upper 12 ir rks Deposits Patterns in Wo 2 or more requ Rhizospheres	be in Remarks): nches etlands uired): in Upper 12 inches

							Data Plo Wetland		25A-SP1 25A
roject/Site	ELST Re-de	lineation			Date:	11/8/2007		Revis	ited 09-25-13
SOIL Soil Surve	ey Data:								
Map Unit N	Name: Norma	a Sandy Loam				Drainage C	lass: Poorly o	drained	I
						Field Obse	rvations Confi	rm Maj	oped Type?
Taxonomy	(Subgroup):	Fluventic Humaqu	lepts			Yes	No X	NA	
Profile De	scription:								
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		ttle Color unsell Moist)		Mottle Abundance	/Contrast		ture, Concretions, zospheres, etc.
0-8	A	10YR 3/1	non	е		none		silt l	oam
8-18	В	10YR 2/1	non	е		none		loan	n
Hi	il Indicators: stosol stic Epipedon					d on Hydric S			
Su Ac Re X Gl	ulfidic Odor quic or Peraguio educing Conditi leyed or Low-C				Orgai Mottle	-	in Sandy Soil		
Su Ad Re X Gi Hi Remarks	ulfidic Odor quic or Peraguid educing Conditi leyed or Low-C gh Organic Con	ions hroma Colors ntent in Surface La disturbances, local	yer	, etc.):	Orgai Mottle	nic Streaking es (Redoximo	in Sandy Soil		
St Ad X Gi Hi Remarks Chroma 1	ulfidic Odor quic or Peraguid educing Conditi leyed or Low-C gh Organic Con (Describe soil	ions hroma Colors ntent in Surface La disturbances, local <i>rdric soils.</i>	yer	, etc.):	Orgai Mottle	nic Streaking es (Redoximo	in Sandy Soil		
Su Ad Remarks Chroma 1	ulfidic Odor quic or Peraguid educing Conditi leyed or Low-C gh Organic Con (Describe soil soil indicate hy	ions hroma Colors ntent in Surface La disturbances, local <i>vdric soils.</i>	yer variations	, etc.):	Orgai Mottle	nic Streaking es (Redoximo r (Explain in I	in Sandy Soil orphic Feature Remarks)	es)	nt Within a Wetland?
Su Ad Ad Remarks Chroma 1 WETLA Hydrophy	ulfidic Odor quic or Peraguid educing Conditi leyed or Low-C gh Organic Con (Describe soil soil indicate hy ND DETERI	ions hroma Colors ntent in Surface La disturbances, local <i>vdric soils.</i>	yer variations Yes	· ,	Orgai Mottle	nic Streaking es (Redoximo r (Explain in I	in Sandy Soil orphic Feature Remarks) this Samplin	es) ng Poir	nt Within a Wetland? No

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #:

Wetland:

Upland near 25A

25A-SP2

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation	on		Date:	11/8/200	7 Revisited 09-25-13
Applicant/Owner: King Count	у		County:	King	
Investigator: Chip Maney			State:	WA	
1987 Method	✔ 1997 W	A St. Method			Community ID: Upland Shrub
Do Normal Circumstances exist	on the site?	Yes X	No		Field Plot ID: 25A-SP2
Is the site significantly disturbed	(Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem A	irea?	Yes	No	Х	
Demontre (Europein commune la cost	te de la Resta de la compañía de la compañía				

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located 20 feet north of flag W25A-9.

VEGETATION (> Dominant species are checked Plant Species	d) % Cover	Stratum	Indicator	09-25-13 Observations Rubus armeniacus 50%
✓ 1. Agrostis stolonifera	20	н	FAC*	
2. Geranium molle	trace	Н	NL	-
3. Hypochaeris radicata	trace	н	FACU	-
✓ 4. Poa spp.	50	Н		
5. Taraxacum officinale	trace	Н	FACU	
6. Trifolium repens	trace	Н	FAC*	
✓ 7. Rubus armeniacus	50	S	FACU	
Percent of Dominant Species that are OBL, FACW (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates the Remarks (Describe disturbances, relevant local varian <i>The percent of dominant species that are hydrophytic</i>)	trace. ations, seasonal eff	. ,	lawn. Area Rubus arm	Observations - Vegetation used to be is now bark with few landscaping plants. eniacus is still present. c vegetation criterion is not satisfied.
HYDROLOGY Recorded Data (Describe in Remarks):	Wet	land Hydro	ology Indica	tors (Describe in Remarks):
Stream, Lake, or Tide Gage		Primary Inc		
			Inundated	
Aerial Photograph			_	in Upper 12 inches
Other			Water Mai	
X No Recorded Data Available			Drift Lines	
Field Observations:			Sediment	
				Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)		Secondary	Oxidized F Water-Sta Local Soil	2 or more required): Rhizospheres in Upper 12 inches ined Leaves Survey Data blain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.):

No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

							Data F	Plot #:	25A-SP2
							Wetla	nd:	Upland near 25A
						/ /		Devi	
roject/Site	e: ELST Re-de	elineation			Date:	11/8/2007		Revis	sited 09-25-13
SOIL Soil Surv	ey Data:								
Map Unit	Name: Mixed	Alluvial Land				Drainage C	lass: Well	drained	to very poorly drained
						Field Obser	vations Co	nfirm Ma	apped Type?
Taxonomy	(Subgroup):	N/A				Yes	No 🔿	<u>K</u> N#	A
Profile De	escription:								
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		e Color sell Moist)		Mottle Abundance	/Contrast		xture, Concretions, izospheres, etc.
0-6	A	10YR 3/2	none			none		loa	ım
6-16	В	10YR 3/2	10YR	5/6		few, fine, prom	ninent	gra	avelly loam
H H S A A X G H Remarks	educing Condit leyed or Low-C igh Organic Co (Describe soil		variations, e		Fe/M Orga (Mottle	d on Hydric S n Concretion nic Streaking es (Redoximo r (Explain in F	s in Sandy S orphic Featu		
Chilonna 2	Son with redux	intorphic realures in	luicale nyun	solis.					
	ND DETERI	MINATION							
	rtic Vegetation	Present?	Yes	No	Х	ls	this Samp	ling Po	int Within a Wetland?
Hydrophy	rtic Vegetation	Present?	Yes Yes X	No No	<u> </u>	ls	this Samp	ling Po	int Within a Wetland?

Remarks

Wetland vegetation, and hydrology criteria are not met. Therefore, the sample plot is not located in a wetland.

			Data Plot #: 25B-SP1
			Wetland: 25B
WETLAN	ID DETE	RMINATIO	 N
(Modified from: 1987 A	COE We	tlands Del	lineation Manual)
Project/Site: ELST Re-delineation		Date: 11/8	8/2007 Revisited 09-25-13
Applicant/Owner: King County		County: K	ing
Investigator: Matt Maynard		State: W	/A
□ 1987 Method	Method		Community ID: PEM
Do Normal Circumstances exist on the site? Ye	es <u>X</u>	No	Field Plot ID: 25B-SP1
Is the site significantly disturbed (Atypical Situation)? Ye	∋s	No X	_
Is the area a potential Problem Area? Ye	es	No X	
Remarks (Explain sample location, disturbances, problem a	areas):		_
VEGETATION (> Dominant species are checked) Plant Species	% Cove	er Stratum	Indicator
✓ 1. Phalaris arundinacea	100	Herb	FACW
2. Lonicera involucrata	trace	Shrub	FAC
3. Rosa nutkana	trace	Shrub	FAC
4 _ Alnus rubra	15	Tree	FAC
Percent of Dominant Species that are OBL, FACW, or Face (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.	AC 10	0	
Remarks (Describe disturbances, relevant local variations,	seasonal e	effects, etc.):	
Remarks (Describe disturbances, relevant local variations, <i>The percent of dominant species that are hydrophytic is great</i>		,	drophytic vegetation criterion is satisfied.
· · · ·		,	drophytic vegetation criterion is satisfied.
The percent of dominant species that are hydrophytic is grea	ater than 50	0 percent. Hy	drophytic vegetation criterion is satisfied.
The percent of dominant species that are hydrophytic is great HYDROLOGY	ater than 50	0 percent. Hy	ology Indicators (Describe in Remarks):
The percent of dominant species that are hydrophytic is great HYDROLOGY Recorded Data (Describe in Remarks):	ater than 50	0 percent. Hy etland Hydro	ology Indicators (Describe in Remarks):
The percent of dominant species that are hydrophytic is great HYDROLOGY Recorded Data (Describe in Remarks):Stream, Lake, or Tide Gage	ater than 50	0 percent. Hy etland Hydro	ology Indicators (Describe in Remarks): icators:
The percent of dominant species that are hydrophytic is great HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph	ater than 50	0 percent. Hy etland Hydro Primary Ind	blogy Indicators (Describe in Remarks): icators: Inundated

Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:4(in.)

	Drift Lines
	Sediment Deposits
	Drainage Patterns in Wetlands
Secondary	Indicators (2 or more required):
	Oxidized Rhizospheres in Upper 12 inches
	Water-Stained Leaves
	Local Soil Survey Data
	Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.):

Site visits were conducted in January of 2008 to confirm hydrology. Saturation in the upper 12 inches satisfies wetland hydrology criterion.

09-25-13 Observations - No saturated soils to at least 18 inches below the surface.

						Data Plot #:	25B-SP1
						Wetland:	25B
niact/Site	e: ELST Re-de	alineation		Date:	11/8/2007	Revi	isited 09-25-13
	ELOT Ne-de	enneation		Dale.	11/0/2007		
SOIL Soil Surv	ey Data:						
/lap Unit I	Name: Mixed	Alluvial Land			Drainage Clas	s: Well drained	to very poorly drained
					Field Observa	tions Confirm M	apped Type?
Гахопоту	(Subgroup):	N/A			Yes	No X N	A
Profile De	escription:						
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co		exture, Concretions, nizospheres, etc.
0-6	A	10YR 3/2	none		none	gra	avelly silt loam
6-17	В	10YR 3/1	10YR 3/3		few, fine, faint	sil	t loam
Hi Hi Si Ad Ad X G Hi Remarks	educing Condit leyed or Low-C igh Organic Co (Describe soil		ations, etc.):	Fe/M Organ Mottle	d on Hydric Soil n Concretions nic Streaking in es (Redoximorp r (Explain in Rer	Sandy Soils hic Features)	
	ND DETERI						
	tic Vegetation				Is th	is Sampling Po	int Within a Wetland?
HVORIC SO	ils Present?	Ye	s X No			Yes X	No

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 25B-SP2

Wetland:

Upland near 25B

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/8/200	7 Revisited 09-25-13
Applicant/Owner: King County		County:	King	
Investigator: Matt Maynard		State:	WA	
□ 1987 Method	A St. Method			Community ID: Upland Shrub
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 25B-SP2
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	Х	

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located 20 feet south of flag 1 under a canopy of alders, but southwest of tree trunk.

VEGETATION (> Dominant species are checked) **Plant Species** % Cover Indicator Stratum Phalaris arundinacea 15 Herb FACW 1. Rubus armeniacus 75 Shrub FACU 2. 40 Tree FAC Alnus rubra 3. Percent of Dominant Species that are OBL, FACW, or FAC 50 (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in R	emarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or	Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Dat		Inundated Saturated in Upper 12 inches Water Marks
Field Observations:		Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) none (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describ	be recent precipitation, hydro	ologic modifications, local variations, etc.):

No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

					Data Plot #	25B-SP2	
					Wetland:	Upland near 25B	
Project/Site: ELST Re-	delineation		Date:	11/8/2007	Re	evisited 09-25-13	
SOIL Soil Survey Data:							
Map Unit Name: Mixe	d Alluvial Land			Drainage Class	: Well draine	ed to very poorly drained	
				Field Observati	ons Confirm	Mapped Type?	
Taxonomy (Subgroup):	N/A			Yes N	lo <u>X</u>	NA	
Profile Description:							
Depth Horizon (Inches) Designatior	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co		Texture, Concretions, Rhizospheres, etc.	
0-16 A	10YR 3/2	none		none		gravelly loam	
6-18+ B	10YR 3/2	none		none		gravelly loam	
Hydric Soil Indicators	:						
Histosol			Liste	d on Hydric Soils	List		
Histic Epipedor	۱		Fe/M	In Concretions			
Sulfidic Odor				nic Streaking in S			
	uic Moisture Regime			es (Redoximorph	,		
			Othe	r (Explain in Rem	iarks)		
Reducing Conc							
Gleyed or Low-	Chroma Colors Content in Surface Layer						

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Х	Is this Sampling Point Within a Wetland?
Hydric Soils Present?	Yes	No	Х	Yes No X
Wetland Hydrology Present?	Yes	No	Х	

Remarks

Hydrophytic vegetation, hydric soil, and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

Data Plot #: 25B-SP3 Wetland: 25B

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/8/2007	7 Revisited 09-25-13	
Applicant/Owner: King County		County:	King		
Investigator: Matt Maynard		State:	WA		
□ 1987 Method	A St. Method			Community ID: PFO	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 25B-SP3	
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х		
Is the area a potential Problem Area?	Yes	No	х		
Remarks (Explain sample location, disturbances, prob	lem areas):				

This sample plot is located approximately 12 feet east of flag 25B-7.

VE	GEI	TATION (Dominant species are checked)			
		Plant Species	% Cover	Stratum	Indicator
~	1.	Carex obnupta	50	Herb	OBL
~	2.	Cornus sericea	75	Shrub	FACW
	З.	Rosa pisocarpa	trace	Shrub	FAC
~	4.	Fraxinus latifolia	60	Tree	FACW
	cent cept l	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing	100		

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in F	emarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or	Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Dat		Inundated X Saturated in Upper 12 inches X Water Marks
Field Observations:	d Observations:	Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) 18 (in.) 12 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): Watermarks indicate inundation at approximately 8 inches. Saturation at 12 inches and watermarks at 8 inches indicated wetland hydrology is present. Wetland hydrology criterion is satisfied.

09-25-13 Observations - No saturated soils to at least 18 inches below the surface.

					Data Plot #: Wetland:		#: 25B-SP3 25B	
roject/Site	e: ELST Re-de	elineation		Date:	11/8/2007	[Revisited 09-25-13	
SOIL Soil Surv	ey Data:							
Map Unit	Name: Mixed	Alluvial Land			Drainage Class	: Well drai	ined to very poorly drained	
					Field Observati	ions Confiri	m Mapped Type?	
Taxonomy	(Subgroup):	N/A			Yes N	lo X	NA	
Profile De	escription:							
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co	ntrast	Texture, Concretions, Rhizospheres, etc.	
0-7	A	10YR 2/1	none		none		loam	
7-17	В	2.5Y 4/1	7.5YR 4/6		common, medium	, prominent	clay loam	
17-20	С	10YR 5/1	7.5YR 4/6		common, medium	, prominent	clay loam	
н н	bil Indicators: istosol istic Epipedon		_	Fe/M	d on Hydric Soils In Concretions			
	ulfidic Odor	ia Maiatura Dagima		Organic Streaking in Sandy Soils Mottles (Redoximorphic Features)				
	educing Condit	ic Moisture Regime	X	Other (Explain in Remarks)				
	leyed or Low-C					ianto)		
	2	ntent in Surface Layer						
		disturbances, local var imorphic features indica						
WETLA	ND DETER	MINATION						
Hydrophy	tic Vegetation	Present? Y	es X No		Is this	s Sampling	g Point Within a Wetland	

Hydric Soils Present?YesWetland Hydrology Present?Yes

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Х

Х

No

No

				Data Plot #:	#: 25C-SP1
				Wetland:	25C
	WETLAND DE	TERMIN	ATION		
(Modified f	rom: 1987 ACOE	Wetlands	Deline	ation Manual)
Project/Site: ELST Re-delineation		Date:	11/8/200)7	Revisited 09-25-13
Applicant/Owner: King County		County	: King		
Investigator: Chip Maney		State:	WA		
1987 Method	✔ 1997 WA St. Metho	d		Community ID	PFO
Do Normal Circumstances exist on the site?	Yes 🔿	K No		Field Plot ID:	25C-SP1
Is the site significantly disturbed (Atypical Si	tuation)? Yes	No	Х		
Is the area a potential Problem Area?	Yes	No	x		
Remarks (Explain sample location, disturba	ances. problem areas):				

This sample plot is located 25 feet west of flay W25C-3. No upland plot was sample for this wetland.

VEGETATION (> Dominant species are checked) **Plant Species** Indicator % Cover Stratum Equisetum telmateia Herb FACW 5 1. Phalaris arundinacea 2 Herb FACW 2. 45 FACW Cornus sericea Shrub 3. Rosa pisocarpa 10 Shrub FAC 4. Rubus armeniacus 20 Shrub FACU 5. 75 FAC Alnus rubra Tree 6. Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):				
Stream, Lake, or Tide Gage	Primary Indicators:				
Aerial Photograph Other X No Recorded Data Available	X Saturated in Upper 12 inches Water Marks				
X No Recorded Data Available Field Observations:	Drift Lines Sediment Deposits Drainage Patterns in Wetlands				
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:1(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)				

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.):

Site visits were conducted in January of 2008 to confirm hydrology. Saturation in the upper 12 inches satisfies wetland hydrology criterion.

09-25-13 Observations - No saturated soils to at least 18 inches below the surface.

						Data Plot # Wetland:	: <u>25C-SP1</u> <u>25C</u>
Project/Site	ELST Re-de	elineation		Date:	11/8/2007	Re	evisited 09-25-13
SOIL Soil Surve	ey Data:						
Map Unit N	Name: Alderv	vood gravelly sandy loa	um, 6 to 15 % slopes	6	Drainage Clas	s: Moderately	well drained
					Field Observa	tions Confirm	Mapped Type?
Taxonomy	(Subgroup):	Entic Durochrepts			Yes	No X	NA
-	scription:				100	<u> </u>	
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co		Texture, Concretions, Rhizospheres, etc.
0-10	Α	10YR 3/1, 10YR 5/2	10YR 5/6		common, fine, pre	ominent	loam
10-18	В	10YR 3/1	none		none		silt loam
Hi Hi Su Ac Ac X Gi Hi Remarks	educing Condit leyed or Low-C gh Organic Co (Describe soil		,	Fe/N Orga Mottl	d on Hydric Soil In Concretions unic Streaking in les (Redoximorp er (Explain in Rer	Sandy Soils hic Features)	
	Son and reduxi						
WETLA	ND DETERI	MINATION					
Hydrophy	tic Vegetation	Present? Ye	es <u>X</u> No		Is th	is Sampling F	Point Within a Wetland?
Hydric So	ils Present?	Ye	es <u>X</u> No			Yes X	No
		_					

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 25F-SP1

Wetland:

25F

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/8/200	7 Revisited 09-27-13
Applicant/Owner: King County		County:	King	
Investigator: Chip Maney, Erik Christensen		State:	WA	
□ 1987 Method	WA St. Method			Community ID: PFO
Do Normal Circumstances exist on the site? Yes X		No		Field Plot ID: 25F-SP1
Is the site significantly disturbed (Atypical Situation)? Yes		No	Х	
Is the area a potential Problem Area?	Yes	No	Х	

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 12 feet northeast of flag W25F-1.

VEGETATION (> Dominant species are checked) Indicator **Plant Species** % Cover Stratum Convolvulus arvensis 15 Herb NL 1. Ranunculus repens 15 Herb FACW 2. 75 FACW Cornus sericea Shrub 3. Rubus armeniacus 15 Shrub FACU 4. Alnus rubra 25 FAC Tree 5. FACW+ Salix lucida 40 Tree 6. Percent of Dominant Species that are OBL, FACW, or FAC 100

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in R	emarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or	Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Dat Field Observations:		Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) none (in.) 8 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.):

No hydrology was observed on 11/08/07. Saturation was observed at 8" during a revisit conducted on 04/18/08. Wetland hydrology criterion is satisfied.

09-27-13 Observations - No saturated soils to at least 18 inches below the surface.

						Data Plot #: Wetland:	25F-SP1 25F
oject/Site	e: ELST Re-de	elineation		Date:	11/8/2007	Re	visited 09-27-13
SOIL Soil Surv	ey Data:						
/lap Unit I	Name: Mixed	Alluvial Land			Drainage Clas	s: Well draine	d to very poorly drained
					Field Observa	tions Confirm I	Mapped Type?
axonomy	(Subgroup):	N/A			Yes I	No <u>X</u> I	NA
Profile De	escription:						
Depth Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co		Texture, Concretions, Rhizospheres, etc.
-10	A	10YR 2/1	none		none		silt loam
0-18	В	10YR 4/1	7.5Y 4/6		common, fine, pro	ominent	sandy loam
H H Si Ai R R X G H Remarks	educing Condit leyed or Low-C igh Organic Co (Describe soil		ations, etc.):	Fe/M Orga (Mott	d on Hydric Soil: In Concretions Inic Streaking in les (Redoximorp r (Explain in Rer	Sandy Soils hic Features)	
	ND DETERI						
	tic Vegetation		s X No		Is th	is Sampling P	oint Within a Wetland?
	ils Present?	Ye	s X No			Voc V	No
		_	· · · ·			Yes X	No

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Project/Site: ELST Re-delineation

Data Plot #:	26A-SP1
Wetland:	26A

Revisited 09-27-13

WETLAND DETERMINATION

Date: 11/9/2007

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Applicant/Owner: King County			County:	: King			
nvestigator: Matt Maynard			tate:	WA			
_ 1987 Method	VA St. Meth	nod			Community	ID: PEN	Л
Do Normal Circumstances exist on the site?	Yes	Х	No _		Field Plot ID): 26A-S	P1
Is the site significantly disturbed (Atypical Situation)?	Yes		No	Х	_		
Is the area a potential Problem Area?	Yes		No	Х			
Remarks (Explain sample location, disturbances, pro	oblem areas	s):					
This sample plot is located approximately 35 feet sout	theast of fla	g W26A	-13.				
VEGETATION (Dominant species are checked			Ohnshum				
Plant Species		6 Cover	Stratun		licator		
 Phalaris arundinacea Bubus spectabilis 		00 race	Herb Shrub	FA FA	CW		
2. Rubus spectabilis			Shirub		0+		
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local variations)	trace. ations, seas			,	hytic vegetatio	n criterion	is satisfied.
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i>	trace. ations, seas	sonal eff		,	hytic vegetatio	n criterior	is satisfied.
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks):	trace. ations, seas	sonal eff han 50 µ	percent.	Hydropi	hytic vegetatio Indicators		
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY	trace. ations, seas	sonal eff han 50 p Wet l	percent.	Hydrop	/ Indicators		
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks):	trace. ations, seas	sonal eff han 50 p Wet l	bercent.	Hydropu drology Indicato	/ Indicators		
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	trace. ations, seas	sonal eff han 50 p Wet l	land Hy Primary	Hydropo drology Indicato	/ Indicators rs:	(Describe	in Remarks):
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph	trace. ations, seas	sonal eff han 50 p Wet l	land Hy Primary	Hydroph drology Indicato Inu Sa Wa	r Indicators rs: undated iturated in Upp ater Marks	(Describe	in Remarks):
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other	trace. ations, seas	sonal eff han 50 p Wet l	land Hy Primary	Hydropu drology Indicato Sa Wa Dri	rs: Indated Iturated in Upp ater Marks ift Lines	(Describe er 12 inch	in Remarks):
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available	trace. ations, seas	sonal eff han 50 p Wet l	land Hy Primary	drology Indicato	r Indicators rs: undated turated in Upp ater Marks ift Lines diment Depos	(Describe er 12 inch its	in Remarks): nes
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available	trace. ations, seas	sonal eff han 50 p Wet l	land Hy Primary	drology Indicato	rs: Indated Iturated in Upp ater Marks ift Lines	(Describe er 12 inch its	in Remarks): nes
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other No Recorded Data Available Field Observations: Depth of Surface Water: <u>1</u> (in.)	trace. ations, seas	sonal eff han 50 µ Wet	Percent.	Hydroppi rdrology Indicato Inu Sa Dri Se Dri	r Indicators rs: undated turated in Upp ater Marks ift Lines diment Depos	(Describe er 12 inch its is in Wetla	in Remarks): nes ands
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other No Recorded Data Available Field Observations: Depth of Surface Water: <u>1</u> (in.) (in.)	trace. ations, seas	sonal eff han 50 µ Wet	Percent.	drology Indicato Inu Sa Wa Dri Se Dri ary Indid	r Indicators rs: undated turated in Upp ater Marks ift Lines diment Depos ainage Patterr	(Describe er 12 inch its is in Wetla	in Remarks): nes ands ed):
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other No Recorded Data Available Field Observations: Depth of Surface Water: <u>1</u> (in.)	trace. ations, seas	sonal eff han 50 µ Wet	Percent.	Hydroppi drology Indicato Inu Sa Dri Se Dri ary India	r Indicators rs: undated turated in Upp ater Marks ift Lines wdiment Depos ainage Patterr cators (2 or mo	(Describe er 12 inch its is in Weth ore require oheres in	in Remarks): nes ands ed):
Percent of Dominant Species that are OBL, FACV (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY Recorded Data (Describe in Remarks): 	trace. ations, seas	sonal eff han 50 µ Wet	Percent.	Hydroppi drology Indicato Inu Sa Dri Se Dri Se ary India	/ Indicators rs: undated turated in Upp ater Marks iff Lines iff Lines idiment Depos ainage Patterr cators (2 or mo cators (2 or mo	(Describe er 12 inch its is in Wetta pre require pheres in eaves	in Remarks): nes ands ed):

09-27-13 Observations - Soil saturation at surface. Free water in pit at 5 inches below surface.

								Dat	a Plot #	t: 20	6A-SP1	
								We	tland:	26	6A	
roject/Site	ELST Re-de	lineation				Date:	11/9/2007		R	evisited	l 09-27-13	
SOIL Soil Surv	ey Data:											
Map Unit I	-	ar Muck					Drainage C	lass: ve	ry poorly	/ draine	d	
I							Field Obse					
Faxonomy	(Subgroup):	Terric Med	isaprists				Yes	No		NA		
-	scription:							_				
Depth Inches)	Horizon Designation	Matrix Co (Munsell N	-	Mottle Co (Munsell			Mottle Abundance	e/Contras			e, Concretion pheres, etc.	ns,
)-16	A	10YR 2/1		none			none			silt		
			09-27-13 Ob	servation	is - 0-20	А	10YR 2	/1 r	none	none	e silt	7
-lydric So	il Indicators:											
-	stosol					Listec	l on Hydric S	Soils List				
Hi	stic Epipedon						n Concretior					
Si	ulfidic Odor					Orgar	nic Streaking	in Sand	y Soils			
A	quic or Peragui	c Moisture I	Regime			Mottle	es (Redoxim	orphic Fe	atures)			
	educing Conditi					Other	(Explain in	Remarks)			
	eyed or Low-C											
	gh Organic Co	ntent in Sur	face Layer									
Remarks	(Describe soil		s, local variat	ions, etc.)	:							
Remarks			s, local variat	ions, etc.)	:							
Remarks Chroma 1	(Describe soil	nydric soils.		ions, etc.)	:							
Remarks Chroma 1 WETLA	(Describe soil soil indicates h	nydric soils. MINATIO			No		ls	this Sar	npling l	Point W	/ithin a We	tland?
Remarks Chroma 1 WETLA Iydrophy	(Describe soil soil indicates h	nydric soils. MINATIO	N	X			Is	this Sar Yes		Point V	/ithin a We	tland?

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data	Plot #:	26A-SP2

26A

Wetland:

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/9/200	Revisited 09-27-13	
Applicant/Owner: King County		County:	King		
Investigator: Chip Maney, Erik Christensen		State:	WA		
□ 1987 Method ✓	1997 WA St. Method			Community ID: PSS	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 26A-SP2	
Is the site significantly disturbed (Atypical Situation)? Ye		No	Х		
Is the area a potential Problem Area?	Yes	No	Х		

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located 6 feet east of flag W26A-4.

hanging) 90%
-

morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

*Acer macrophyllum was rooted outside of the wetland but was overhaning to provide 90 percent cover. The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in R Stream, Lake, or	,	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:				
Aerial Photograph Other X No Recorded Dat Field Observations:		X Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands				
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	2 (in.) na (in.) na (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)				

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *Inundation to a depth of 2 inches satisfies wetland hydrology criterion.*

09-27-13 Observations - Soil saturation at surface. No inundation or free water in pit.

								Data Plot #	#: <u>26</u>	A-SP2	
								Wetland:	26	Α	
roject/Site	e: ELST Re-de	lineation				Date:	11/9/2007	R	evisited	09-27-13	
SOIL Soil Surv	ey Data:										
Map Unit I	Name: Shalca	ar Muck					Drainage Clas	s: very poorl	y drained	b	
							Field Observa	tions Confirm	Mappeo	d Type?	
Taxanami	(Subgroup):	Torrio M	ladiaapriata				Vaa	No V	ΝΑ		
		Terric IV	ledisaprists				Yes	No <u>X</u>	NA _		
Profile De Depth (Inches)	escription: Horizon Designation	Matrix (Color ell Moist)	Mottle ((Munse			Mottle Abundance/C	ontrast		, Concretior heres, etc.	ıs,
0-10	A	10YR 3/1	,	none			none	ontrast	loam		
10-18	 B	10YR 3/1		10YR 5/6	3		common, fine, pr	ominent	silt loam	1	
10 10		1011110/1	09-27-13 Ob			А	10YR 3/1	none		one	loam
Hydric Sc	oil Indicators:				10-18	В	10YR 4/1 (40 10YR 5/1 (40		/6 20	0%	silt loan
н	istosol					Liste	d on Hydric Soil				
Н	istic Epipedon					Fe/M	n Concretions				
Sulfidic Odor						Orga	nic Streaking in	Sandy Soils			
A	quic or Peragui	c Moistur	e Regime		X	Mottl	es (Redoximorp	hic Features)			
R	educing Condit	ions				Othe	r (Explain in Rei	marks)			
<u> X </u> G	leyed or Low-C	hroma C	olors								
H	igh Organic Co	ntent in S	Surface Layer								
Remarks	(Describe soil	disturbar	nces, local vari	ations, etc	.):						
Chroma 1	soil and redox	imorphic	features indica	ate hydric s	oils.						
WETLA	ND DETER	MINATI	ON								
Hydrophy	tic Vegetation	Present	? Ye	es <u>X</u>	No		Is th	is Sampling	Point W	ithin a Wet	land?
Hydric So	ils Present?		Ye	es X	No			Voo V	Ne		
		_						Yes X	No		

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 26A-SP3

Wetland:

Upland near 26A

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/9/200	7 Revisited 09-27-13
Applicant/Owner: King County		County:	King	
Investigator: Chip Maney, Erik Christensen		State:	WA	
□ 1987 Method	WA St. Method			Community ID: Upland Shrub
Do Normal Circumstances exist on the site? Yes X				Field Plot ID: 26A-SP3
Is the site significantly disturbed (Atypical Situation)'	? Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	Х	

 $\label{eq:result} \textbf{Remarks} \hspace{0.2cm} (\text{Explain sample location, disturbances, problem areas}):$

This sample plot is located approximately 10 feet north of flag W26A-2.

VEGE	TATION (Dominant species are checked)				09-27-13 Observations
	Plant Species	% Cover	Stratum	Indicator	Equisetum telmateia 20% Equisetum hyemale 5%
✓ 1.	Phalaris arundinacea	20	Herb	FACW	Polystichum munitum 5%
2.	Rosa pisocarpa	10	Shrub	rub FAC Calystegia	Calystegia sepium 5%
✓ 3.	Rubus armeniacus	40	Shrub	FACU	Rubus armeniacus 80%
✓ 4.	Spiraea douglasii	40	Shrub	FACW	Acer macropyllum 80%

67

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Rem	arks):	Wetland Hydrology Indicators (Describe in Remarks):					
Stream, Lake, or Tid	e Gage	Primary Indicators:					
Aerial Photograph Other X No Recorded Data A Field Observations:	vailable	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands					
Depth to Free Water in Pit:	none (in.) none (in.) none (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)					

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.*

09-27-13 Observations - No hydrology indicators present.

								Data Plo	t #:	: 26A-SP3 Upland near 26A			
								Wetland	:				
Proiect/Site	e: ELST Re-de	elineation				Date:	11/9/2007		Revisit	ted 09-27-13	3		
SOIL											_		
Soil Surv	ey Data:												
Map Unit I	Name: Shalca	ar Muck					Drainage Clas	s: very poo	orly drai	ined			
							Field Observa	tions Confir	m Map	ped Type?			
Taxonomy	(Subgroup):	Terric M	edisaprists				Yes	No X	NA				
-	escription:		Jaioaprioto					<u></u>					
Depth	Horizon	Matrix C	olor	Mottle Col	or		Mottle		Text	ure, Concre	tions.		
(Inches)					/loist)		Abundance/C	ontrast		Rhizospheres, etc.			
0-10	A	10YR 3/2		7.5YR 4/6			common, fine-co	arse, promine	ent loam	loam			
10-18	В	10YR 4/2		none			none		loam				
			09-27-13 Obs		0-18 18-20	A B	10YR 3/2 10YR 4/4	none none	none		oam a. loam		
•	oil Indicators:				10 20				non	<u> </u>	a. Iouin		
	istosol istic Eninedon					_	d on Hydric Soil n Concretions	S LIST					
Histic Epipedon Sulfidic Odor							Drganic Streaking in Sandy Soils						
Aquic or Peraguic Moisture Regime							ottles (Redoximorphic Features)						
Reducing Conditions							r (Explain in Re		,				
G	leyed or Low-C	hroma Co	lors										
Hi	igh Organic Co	ntent in S	urface Layer										
Remarks	(Describe soil	disturban	ces, local varia	ations, etc.):									
No indicat	ors of hydric so	oil are pre	sent. Hydric so	oil criterion is	not sat	tisfied.							
WETLA	ND DETER	MINATI	NC										
Hydrophy	tic Vegetation	Present	Ye Ye	s <u>X</u> 1	No		Is th	is Samplin	g Poin	t Within a V	Vetland?		
Hydric So	ils Present?		Ye	s 1	No	Х		Yes	N	lo X			
Wetland H	Hydrology Pres	sent?	Ye	s 1	No	X				··· <u>··</u>			

Remarks

Wetland hydrology and hydric soil criterion are not satisfed. Therefore, the sample plot is not located in a wetland.

					W	etland:	26B
WETLAI	ND E	DETER	RMINA		١		
(Modified from: 1987 A		E Wet	lands	Delir	neation M	anual)	
Project/Site: ELST Re-delineation		I	Date:	11/2/2	007	Rev	visited 03-20-14
Applicant/Owner: King County		(County:	Kin	g County		
Investigator: Linda Krippner/Rachel Hulscher		5	State:	WA			
□ 1987 Method	. Metł	hod			Commu	unity ID:	PEM
Do Normal Circumstances exist on the site? Y	′es		No	Х	Field Pl	ot ID: 26	B-SP1
Is the site significantly disturbed (Atypical Situation)? Y	′es	Х	No				
Is the area a potential Problem Area? Y	'es		No	Х			
Remarks (Explain sample location, disturbances, problem Vegetation has been highly modified by human disturbance wetland determination. This sample plot is located approxim	and t	the weth					
VEGETATION (> Dominant species are checked)						03-20-14	Observations
Plant Species	9	% Cover	Stratu	ım	Indicator		repens 40%
1. Geranium robertianum	1	10	Herb		NL	Poa spp.	capillaris 30% 30%
✓ 2. Phalaris arundinacea	2	20	Herb		FACW	L	natus 10%

Data Plot #:

26B-SP1

Scirpus microcarpus 5%

Taraxacum officinale 5%

Rubus armeniacus 30 5. Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied. The lawn is dominated by dandelions, framed by a mix of apple trees to north, and Rubus armeniacus /Phalaris arundinacea to east. Disturbed site has weeds and planted vegetation (Pompous grass).

33

40

80

Herb

Herb

Shrub

FACU

FACU

HYDROLOGY

Poa spp.

Taraxacum officinale

3.

4

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: none (in.) Depth to Free Water in Pit: none (in.) Depth to Saturated Soil: 9 (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): Soil saturation in the upper 12 inches satisfies wetland hydrology criterion.

03-20-14 Observations - Soil saturation at 9 inches. Free water in pit at 9 inches below surface.

								Data Plot #	#: <u>26B-</u>	SP1
								Wetland:	26B	
oject/Site	ELST Re-de	lineation				Date:	11/2/2007	R	evisited 03-	20-14
SOIL Soil Surve	ey Data:									
1ap Unit N	Name: Shalca	ar Muck					Drainage Class	s: very poorly	y drained	
							Field Observat	ions Confirm	Mapped Ty	/pe?
avonomy	(Subgroup):	Torrio Ma	edisaprists				Yes N	No X	NA	
	· · · · · · -	Terric Ivie	cuisaprisis						NA	_
Depth Inches)	scription: Horizon Designation	Matrix C (Munsel		Mottle Co (Munsell			Mottle Abundance/Co		Texture, Co Rhizosphe	
-12	А	10YR 2/1		none			none		sandy loam	
2-16	В	2.5Y 3/2		10YR 5/6			few, medium, dist	inct	sand	
lydric So	il Indicators:		03-20-14 Ob	servations	- 0-12 12-16	A B	10YR 2/1 2.5Y 4/2 (85	none %) 10YR	none 5/6 15%	sa. loam sand
-	stosol					Lister	d on Hydric Soils	-		
	stic Epipedon					_	n Concretions			
Sı	ulfidic Odor					Orga	nic Streaking in	Sandy Soils		
Ac	quic or Peragui	c Moisture	e Regime		Х	Mottle	es (Redoximorpl	nic Features)		
Re	educing Condit	ions				Other	r (Explain in Ren	narks)		
	leyed or Low-C									
Hi	gh Organic Co	ntent in Si	urface Layer							
	(Describe soil			. ,						
ow chron	na, redoximorp	hic feature	es although sit	e is disturb	ed.					
	ND DETERI									
				•	No	v	la thi	e Samplina	Point With	in a Watland?
	tic Vegetation	Present?			—	<u>X</u>	is thi	s sampling		in a Wetland?
iyaric So	ils Present?		Ye	s <u>X</u>	No			Yes X	No	

Remarks

Wetland Hydrology Present?

Vegetation has been highly modified by human disturbance. Vegetation is not used in the wetland determination. Hydric soil and wetland hydrology criteria are satisfied. The area has been determined to be wetland based on best professional judgement.

Yes X No

Wetland: Upland near 26B WETLAND DETERMINATION (Modified from: 1987 ACOE Wetlands Delineation Manual) Revisited 03-20-14 Project/Site: ELST Re-delineation 11/2/2007 Date: Applicant/Owner: King County County: King County Investigator: Linda Krippner/Rachel Hulscher State: WA 1987 Method ✓ 1997 WA St. Method Community ID: Upland Shrub/Herb Do Normal Circumstances exist on the site? Yes X No Field Plot ID: 26B-SP2 Is the site significantly disturbed (Atypical Situation)? Х No Yes Is the area a potential Problem Area? Х Yes No Remarks (Explain sample location, disturbances, problem areas):

Data Plot #:

26B-SP-2

This sample plot is located near the trail. This sample plot is located approximately 6 feet south of Flag 26B-2.

VE	GE	CATION (✓ Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	03-20-14 Observations Phalaris arundinacea 25%
	1.	Equisetum telmateia	10	Herb	FACW	Poa spp. 20% Agrostis capillaris 20%
~	2.	Pampas grass	20	Herb	NL	Festuca arundinacea 10%
~	3.	Phalaris arundinacea	50	Herb	FACW	Taraxacum officinale 5%
~	4.	Rubus armeniacus	60	Shrub	FACU	
	5.	Malus spp.	10	Tree		
		of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing	33			

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied. Athough the vegetation is very disturbed.

HYDROLOGY

Recorded Data (Describe in Re	emarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or	Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Field Observations:		Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none(in.)none(in.)none(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describ	e recent precipitation, hydro	ologic modifications, local variations, etc.):

No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

03-20-14 Observations - Soil saturation at 14 inches. No inundation or free water in pit.

								Data Plot	#:	26B-SP-2		
								Wetland:		Upland	near 26B	
Project/Site	: ELST Re-de	lineation				Date:	11/2/2007		Revisite	ed 03-20)-14	
SOIL Soil Surve	ey Data:											
Map Unit N	lame: Shalca	ar Muck					Drainage Clas	s: very poor	rly drair	ned		
							Field Observa				e?	
Taxonomy	(Subgroup):	Terric M	edisaprists				Yes	No X	NA			
Profile De												
Depth (Inches)	Horizon Designation	Matrix C (Munse		Mottle Colo (Munsell M			Mottle Abundance/Co	ontrast		re, Con spheres	cretions, s, etc.	
0-15	A	10YR 3/2		none			none		gravel	ly sandy	loam	
			03-20-14 Obs			A	10YR 2/1	none		none	gr. loam	
Hydria Sa	il Indicators:			1	5-19	В	2.5Y 4/3	none		none	sand	
-	stosol					Lister	d on Hydric Soil	s List				
	stic Epipedon						n Concretions					
Sı	Ilfidic Odor					Orga	nic Streaking in	Sandy Soils	;			
Ac	uic or Peragui	c Moisture	e Regime			Mottle	es (Redoximorp	hic Features	5)			
	educing Condit					Other	r (Explain in Rer	narks)				
	eyed or Low-C											
	gh Organic Co		-									
	(Describe soil soil indicators a		-	. ,	t catiafi	od						
No nyune :		are preser			sausiid	50.						
WETLA	ND DETERI		ON									
Hydrophy	ic Vegetation	Present	Yes	s N	o)	x	Is th	is Sampling	g Point	Within	a Wetland?	
Hydric So	ils Present?		Yes	s N	o >	<		Yes	No	o x		
Wetland H	ydrology Pres	sent?	Yes	s N	o)	<		103		<u> </u>		

Remarks

Wetland vegetation, hydrology, and soil criteria are not met. Therefore, the sample plot is not located in a wetland.

Data Plot #: 26C-SP1 26C

Wetland:

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation	Date:	11/2/2007		Revisited 03-20-14		
Applicant/Owner: King County		County:	King C	ounty		
Investigator: Linda Krippner/Rachel Hulscher		State:	WA			
□ 1987 Method	A St. Method			Community ID): PEM	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID:	26C-SP1	
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х			
Is the area a potential Problem Area?	Yes	No	х			
Remarks (Explain sample location, disturbances, prob	lem areas):					

This sample plot is located approximately 3 feet west of Flag 26C-2.

Plant Species	% Cover	Stratum	Indicator	Agrostis spp. 50% Taraxacum officinale 10%
Trifolium repens	30		FAC*	Phalaris arundinacea 30%
Agrostis spp.	50	Herb	FAC	Poa spp. 50%
dandelion	10	Herb	FACU	Ranunculus repens 40%
Phalaris arundinacea	30	Herb	FACW	
Poa spp.	50	Herb	UNK	
Ranunculus repens	40	Herb	FACW	_

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Therefore, the hydrophytic vegetation criterion is satisfied. Most of wetland slope is lawn and apple orchard, rimmed with Phalaris arundinacea.

HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:14(in.)Depth to Saturated Soil:9(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): Soil saturation in the upper 12 inches satisfies the wetland hydrology criterion.

03-20-14 Observations - Soil saturation at surface. Free water in pit at 3 inches below surface. Standing water in microdepressions.

								Data Plot #	t: <u>26C-S</u>	P1
								Wetland:	26C	
roject/Site	ELST Re-de	lineation				Date:	11/2/2007	R	evisited 03-2	20-14
SOIL Soil Surve	ey Data:									
/Iap Unit N	Name: Shalca	ar Muck					Drainage Cla	ass: Moderately	y well draine	d
								ations Confirm		
Taxanamu	(Subgroup):	Torrio M	odiooprioto				Voo	No X	ΝΑ	
		Terric Ivi	edisaprists				Yes	No <u>X</u>	NA	-
	scription:	Matula) a la v	Mattia	Oalar		Mattle		Tautura Ca	
Depth Inches)	Horizon Designation	Matrix C (Munsel		Mottle (Munse	ell Moist)		Mottle Abundance/0		Texture, Co Rhizosphere	
-16	A	10YR 3/1		10YR 3/	/6		many, medium,	distinct	gravelly sand	y loam
			03-20-14 Obs	ervation			0YR 3/1	10YR5/8	20%	si. loam
					6-12 12-18		0YR 3/1 0YR 2/1	10YR5/8 none	20% none	lo. sand Ioam
lydric So	il Indicators:		Remarks - G	avel in u			011(2/1	liene	nono	louin
Hi	stosol					Liste	d on Hydric So	ils List		
	stic Epipedon						n Concretions			
Su	ulfidic Odor					Orga	nic Streaking i	n Sandy Soils		
Ac	quic or Peragui	c Moisture	e Regime			Mottle	es (Redoximor	phic Features)		
Re	educing Conditi	ons				Other	r (Explain in R	emarks)		
X G	eyed or Low-C	hroma Co	olors							
Hi	gh Organic Co	ntent in S	urface Layer							
Remarks	(Describe soil	disturban	ces, local varia	tions, etc	c.):					
ow-chron	na soil matrix c	olor and r	edoximorphic f	eatures i	indicate hy	dric soils	5.			
WETLA	ND DETERI	MINATI	ON							
Hydrophy	tic Vegetation	Present	? Yes	<u>х</u>	No		ls t	his Sampling	Point Within	n a Wetland?
Hydric So	ils Present?		Yes	s X	No			Voo V	No	
					·			Yes X	No	

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes X No

			Butu	Plot #: 26C-SP2
			Wetla	nd: Upland near 26C
WE		ERMINATI	ON	
(Modified from: 19				ual)
				Revisited 03-20-14
Project/Site: ELST Re-delineation			2/2007	
Applicant/Owner: King County		-	King County	
nvestigator: Linda Krippner/Rachel Hulscher		State: V	VA	
_ 1987 Method	A St. Method		Communit	/ ID: Upland Herb
Do Normal Circumstances exist on the site?	Yes X	No	- Field Plot I	D: 26C-SP2
s the site significantly disturbed (Atypical Situation)?	Yes	No X		
s the area a potential Problem Area?	Yes	No X		
Remarks (Explain sample location, disturbances, pro			_	
This upland plot is located on same elevation as trail a	,	the trail along	an orchard and pla	unted tree hedge. The wetland i
s at a lower elevation.		-		
This sample plot is located approximately 7 feet south	of Flag 26B-2.			orth of Abies amabilis row at
	-	toe of fill slo	pe of trall.	
/EGETATION (> Dominant species are checked	1)			-20-14 Observations
Plant Species	% Co	over Stratum		rostis spp. 30%
1 Agrostis spp.	30	Herb		uisetum telmateia 20% alaris arundinacea 40%
2. Equisetum telmateia	20	Herb	' '	a spp. 30%
3. Phalaris arundinacea	40	Herb		ibus armeniacus 10%
4. Poa spp.	30	Herb	UNK	ies amabalis 15%
5. Rubus armeniacus	30	Herb	FACU	alus sp. 40%
6. Abies amabilis	10	Tree	FACU	
✓ 7 Malus sp.	40	Tree/Shru	b NL	
· · · ·				
Percent of Dominant Species that are OBL, FACW	I, or FAC	50		
· · · ·	/, or FAC	50		
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t	I, or FAC			
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia	I, or FAC race. ations, seasona	al effects, etc.)		etation criterion is not satisfied
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic	I, or FAC race. ations, seasona	al effects, etc.)		etation criterion is not satisfied.
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic	I, or FAC race. ations, seasona	al effects, etc.)		etation criterion is not satisfied.
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer	nt. Hydrophytic veg	etation criterion is not satisfied. (Describe in Remarks):
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks):	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer	t. Hydrophytic veg ology Indicators	
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr	nt. Hydrophytic veg ology Indicators dicators:	
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr	<i>t. Hydrophytic veg</i> ology Indicators dicators: _ Inundated	(Describe in Remarks):
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr	<i>t. Hydrophytic veg</i> ology Indicators dicators: Inundated Saturated in Up	(Describe in Remarks):
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr	nt. Hydrophytic veg ology Indicators dicators: Inundated Saturated in Up Water Marks	(Describe in Remarks):
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr	<i>t. Hydrophytic veg</i> ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines	(Describe in Remarks): per 12 inches
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr	<i>t. Hydrophytic veg</i> ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines Sediment Depo	(Describe in Remarks): per 12 inches sits
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr	<i>t. Hydrophytic veg</i> ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines	(Describe in Remarks): per 12 inches sits
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr Primary Ind	t. Hydrophytic veg ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines Sediment Depo Drainage Patter	(Describe in Remarks): per 12 inches sits ns in Wetlands
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other No Recorded Data Available Field Observations:	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr Primary Ind	t. Hydrophytic veg ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines Sediment Depo Drainage Pattel	(Describe in Remarks): per 12 inches sits ns in Wetlands nore required):
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are 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: <u>none</u> (in.)	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr Primary Ind	t. Hydrophytic veg ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines Sediment Depo Drainage Patter Indicators (2 or n Oxidized Rhizo:	(Describe in Remarks): per 12 inches sits ns in Wetlands hore required): spheres in Upper 12 inches
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia <i>The percent of dominant species that are hydrophytic</i> HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available ====================================	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr Primary Ind	t. Hydrophytic veg ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines Sediment Depo Drainage Patter Indicators (2 or n Oxidized Rhizo Water-Stained	(Describe in Remarks): per 12 inches sits ns in Wetlands nore required): spheres in Upper 12 inches Leaves
Percent of Dominant Species that are OBL, FACW except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates t Remarks (Describe disturbances, relevant local varia The percent of dominant species that are hydrophytic HYDROLOGY Recorded Data (Describe in Remarks): 	I, or FAC race. ations, seasona <i>is not greater</i>	al effects, etc.) than 50 percer Wetland Hydr Primary Ind	t. Hydrophytic veg ology Indicators dicators: Inundated Saturated in Up Water Marks Drift Lines Sediment Depo Drainage Patter Indicators (2 or n Oxidized Rhizo:	(Describe in Remarks): per 12 inches sits ns in Wetlands nore required): spheres in Upper 12 inches eaves ey Data

Soils were not saturated. No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

							Data Plot	#:	#: <u>26C-SP2</u>	
							Wetland:		Upland near 26C	
Project/Site	: ELST Re-de	lineation			Date:	11/2/2007	[Revis	ited 03-20-14	
SOIL					_					
Soil Surve	ey Data:									
Map Unit N	Name: Shalca	ar Muck				Drainage Class	: Moderate	ely we	ell drained	
						Field Observati	ons Confirr	n Ma	pped Type?	
Taxonomy	(Subgroup):	Terric Medisaprist	S			Yes N	lo <u>X</u>	NA		
Profile De	scription:									
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		Mottle Color (Munsell Moi	st)	Mottle Abundance/Co	ntrast		ture, Concretions, zospheres, etc.	
0-16	А	10YR 3/2	į	none		none		san	dy loam	
Hi Hi Su Ac Re Gl Hi Remarks	educing Condit eyed or Low-C gh Organic Co (Describe soil		yer variatio	. ,	Fe/M Orga Mottl Othe	d on Hydric Soils In Concretions Inic Streaking in S les (Redoximorph r (Explain in Rem	Sandy Soils ic Features			
-										
WETLA	ND DETERI	MINATION								
Hydrophy	tic Vegetation	Present?	Yes	No	X	Is this	s Sampling	g Poi	nt Within a Wetland	
Hydric So	ils Present?		Yes	No	Х		Yes		No X	
Wetland H	lydrology Pres	sent?	Yes	No	X					

Remarks

None of three of the wetland criteria are met. Therefore, the sample plot is not located in a wetland.

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

Project Site:	ELST - S	outh S	ammamish Seg	ment		City	/County:	Sam	mamis	sh/King	Sampling D	ate:	<u>03-2</u>	20-14	
Applicant/Owner:	King Cou	nty								State: WA	Sampling P	oint:	<u>W26</u>	SC-SF	<u>'3</u>
Investigator(s):	C. Worsle	ey; K. S	<u>Seckel</u>					Se	ection,	Township, Rang	ge: <u>S32, T2</u>	5N, R06E	-		
Landform (hillslope, ter	race, etc.)	: <u>fl</u>	at, slight depres	sion		Local relief	(concave,	, conve	x, non	e): <u>concave</u>		Slope	e (%):	<u>0%</u>	
Subregion (LRR):	<u>A</u>			La	t:			Long:		_	I	Datum:			
Soil Map Unit Name:	Mixed a	lluvial	land							NWI class	sification:	PSS			
Are climatic / hydrologi	c conditior	ns on t	he site typical fo	r this t	time of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	significantly dist	urbed?	Are "Nori	mal Cir	cumst	ances" present?		Yes	\boxtimes	No	
Are Vegetation	Soil	□,	or Hydrology	□,	naturally problem	matic?	(If neede	d, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
emarks: Sample plot is located at north end of PSS, approximately 10 feet northwest of trail edge, and approxmately 10 feet south of large Salix lucida.									

VEGETATION – Use scientific names of plants Absolute Dominant Indicator Tree Stratum (Plot size: 30 feet) Dominance Test Worksheet: % Cover Species? Status 1. Salix lucida (overhanging from upland) FACW 30 n/a* Number of Dominant Species <u>34</u> (A) That Are OBL, FACW, or FAC: 2. 3. Total Number of Dominant (B) 4 Species Across All Strata: 4. 50% = <u>15</u>, 20% = <u>6</u> 30 = Total Cover Percent of Dominant Species (A/B) 75 That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: 15 feet) 1. Cornus sericea 50 FACW Prevalence Index worksheet: yes FACW 2. Physocarpus capitatus 40 Total % Cover of: yes Multiply by: 3. _____ OBL species x1 = 4. FACW species x2 = FAC species 5. x3 = 50% = <u>45</u>, 20% = <u>18</u> 90 = Total Cover FACU species x4 = Herb Stratum (Plot size: 3 feet) UPL species x5 = 1. Ranunculus repens <u>20</u> ves FAC _ (A) (B) Column Totals: Prevalence Index = B/A = 2. 3. Hydrophytic Vegetation Indicators: □ 1 – Rapid Test for Hydrophytic Vegetation 4. _____ 2 - Dominance Test is >50% 5. _____ 6. 3 - Prevalence Index is <3.01 7. 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 8. 9. 5 - Wetland Non-Vascular Plants¹ 10. _____ Problematic Hydrophytic Vegetation¹ (Explain) 11. ____ ¹Indicators of hydric soil and wetland hydrology must 50% = 10, 20% = 420 = Total Cover be present, unless disturbed or problematic. Woody Vine Stratum (Plot size: 15 feet) FACU 1. Rubus armeniacus 5 <u>yes</u> Hydrophytic 2. Vegetation Yes \boxtimes No 50% = 2.5, 20% = 1 = Total Cover 5 Present? % Bare Ground in Herb Stratum 80 *excluded from calculations per chapter 2 guidance . Species with less than 5% cover are not considered dominant. Remarks:

Project Site: ELST - South Sammamish

SOIL

SOIL										Samplir	ng Point: <u>W2</u>	6C-SP3		
Profile D	escription: (Describe to	o the depth	n needed to c	locument	the indicat	or or confi	irm the absen	nce o	of indicato	rs.)				
Depth	n Matrix				Redox Fea	atures								
(inches)	Color (moist)	%	Color (mo	oist)	%	Type ¹	Loc ²		Texture			Remarks		
<u>0-18</u>	<u>10YR 2/1</u>	100	=		-	=	<u> </u>		loamy sa	nd	_			
					<u> </u>						_			
											_			
											_			
											_			
											_			
											_			
		<u> </u>									_			
¹ Type: C	= Concentration, D=Depl	etion, RM=	Reduced Mat	rix, CS=Co	overed or C	oated Sand	I Grains. ²	² Loc	ation: PL=	Pore Lining,	M=Matrix			
Hydric S	oil Indicators: (Applica	ble to all L	RRs, unless	otherwise	e noted.)				Indic	ators for Pi	oblematic	Hydric S	oils ³ :	
🗆 His	stosol (A1)			Sandy F	Redox (S5)					2 cm Muc	k (A10)			
🗌 His	stic Epipedon (A2)			Stripped	d Matrix (S6)				Red Pare	nt Material (TF2)		
🗆 Bla	ack Histic (A3)			Loamy I	Mucky Mine	eral (F1) (ex	cept MLRA 1))		Very Shal	low Dark Su	Irface (TF	12)	
🗆 Ну	drogen Sulfide (A4)			Loamy (Gleyed Mat	rix (F2)			\boxtimes	Other (Ex	plain in Rem	narks)		
🗆 De	pleted Below Dark Surfa	ce (A11)		Deplete	d Matrix (F3	3)								
🗆 Th	ick Dark Surface (A12)			Redox [Dark Surfac	e (F6)								
🔲 Sa	ndy Mucky Mineral (S1)			Deplete	d Dark Surf	ace (F7)					Irophytic veg			
🗆 Sa	ndy Gleyed Matrix (S4)			Redox [Depressions	s (F8)					logy must b ed or proble		,	
Restricti	ve Layer (if present):													
Туре:														
Depth (in	iches):						Hydric Soils	s Pre	esent?		Yes	\boxtimes	No	
Remarks	: The presence of hyd	drophytic ve	egetation and	wetland h	ydrology, ai	nd a dark m	atrix indicate t	the h	ydric soil (riterion is s	atisfied. Mee	ets Dark	Surface (S7).

HYDROLOGY

Wetl	and Hydrology Indicat	ors:												
Prima	ary Indicators (minimum	of one r	equired	; check	all that	t apply)			Sec	ondary Indicators (2 or n	nore requir	ed)		
	Surface Water (A1)					Water-Stained Leave	s (B9)			Water-Stained Leaves	(B9)			
\boxtimes	High Water Table (A2))				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and 4	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B1	0)			
	Water Marks (B1)					Aquatic Invertebrates	(B13)			Dry-Season Water Tal	ole (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Ode	or (C1)			Saturation Visible on A	erial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizosphere	es along Living Roots	s (C3)		Geomorphic Position (D2)			
	Algal Mat or Crust (B4	L)				Presence of Reduced	l Iron (C4)			Shallow Aquitard (D3)				
	Iron Deposits (B5)					Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5))			
	Surface Soil Cracks (E	36)				Stunted or Stresses F	Plants (D1) (LRR A)			Raised Ant Mounds (D	6) (LRR A)		
	Inundation Visible on	Aerial Im	agery (l	37)		Other (Explain in Ren	narks)			Frost-Heave Hummoc	ks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>8</u>							
	ation Present? des capillary fringe)	Yes	\boxtimes	No		Depth (inches):	surface	Wetlar	nd Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ige, mo	nitoring	well, a	erial photos, previous i	nspections), if availat	ble:						
Rem	arks:													

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

Project Site:	ELST - S	outh S	ammamish Seg	ment		Cit	y/County:	Sam	mamis	sh/King	Sampling Da	ate:	<u>03-1</u>	9-14	
Applicant/Owner:	King Cou	nty								State: WA	Sampling Po	oint:	<u>W26</u>	D-SF	21
Investigator(s):	C. Worsle	e <u>y; K. S</u>	Seckel					Se	ection,	Township, Rang	ge: <u>S33, T2</u>	5N, R06E	-		
Landform (hillslope, ter	rrace, etc.)): <u>fl</u>	<u>at</u>			Local relie	f (concave	, conve	x, nor	ne): <u>none</u>		Slope	e (%):	<u>1%</u>	
Subregion (LRR):	<u>A</u>			La	t:			Long:		_	[Datum:			
Soil Map Unit Name:	Mixed a	lluvial	land							NWI class	sification:	PEM			
Are climatic / hydrologi	c condition	ns on t	he site typical fo	or this t	time of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	significantly dist	turbed?	Are "Nor	mal Ci	cumst	tances" present?		Yes	\boxtimes	No	
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	naturally proble	matic?	(If neede	ed, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
emarks: Sample plot is located at southeast corner of wetland. on northwest side of stream in bend. Approximately 8 feet west of clump of Alnus rubra (5 trunks)									

marks: Sample plot is located at southeast corner of wetland, on northwest side of stream in bend. Approximately 8 feet west of clump of Alnus rubra (5 trunks) growing in adjacent upland. This wetland is a mitigation restoration site with plantings, LWD, and irrigation.

VEGETATION – Use scientific names of plants Absolute Indicator Dominant Tree Stratum (Plot size: 30 feet) **Dominance Test Worksheet:** % Cover Species? Status 1. Alnus rubra (overhaning from upland) 50 FAC <u>n/a*</u> Number of Dominant Species 1 (A) That Are OBL, FACW, or FAC: 2. 3. Total Number of Dominant (B) 1 Species Across All Strata: 4. 50% = ____, 20% = ____ = Total Cover Percent of Dominant Species 100 (A/B) That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: 15 feet) Prevalence Index worksheet: 1. 2. Total % Cover of: Multiply by: 3. **OBL** species x1 = 4. FACW species x2 = FAC species 5. x3 = 50% = ____, 20% = ___ FACU species = Total Cover x4 = Herb Stratum (Plot size: 3 feet) UPL species x5 = 1. Eleocharis obtusa 30 ves OBL _ (A) (B) Column Totals: 10 OBL Prevalence Index = B/A = 2. Scirpus microcarpus no 3. Phalaris arundinacea 2 FACW Hydrophytic Vegetation Indicators: no 4. Nasturium officinale <u>5</u> OBL □ 1 – Rapid Test for Hydrophytic Vegetation no 2 - Dominance Test is >50% 5. Veronica americana 10 OBL \boxtimes no 6. 3 - Prevalence Index is <3.01 7. 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 8. 9. 5 - Wetland Non-Vascular Plants¹ 10. Problematic Hydrophytic Vegetation¹ (Explain) 11. _____ ¹Indicators of hydric soil and wetland hydrology must 50% = <u>28.5</u>, 20% = <u>11.4</u> 57 = Total Cover be present, unless disturbed or problematic. Woody Vine Stratum (Plot size: 15 feet) 1. Hydrophytic 2. Vegetation Yes \boxtimes No 50% = , 20% = = Total Cover Present? % Bare Ground in Herb Stratum 50 *excluded from calculations per chapter 2 guidance . Remarks:

Project Site: ELST - South Sammamish

SOIL

SOIL										S	ampling Point	: <u>W2</u> 6	6D-SP1		
Profil	e Descrij	otion: (Describe t	o the dept	h needed to d	locument	the indica	tor or confi	rm the absen	ce of indicat	ors.)					
De	pth	Matrix				Redox Fe	atures								
(inche	es)	Color (moist)	%	Color (mo	oist)	%	Type ¹	Loc ²	Texture)		F	Remark	S	
<u>0</u>	-6	<u>10YR 2/1</u>	100	-		-	-	<u>-</u>	si. loai	m	high organic	conte	ent		
<u>6-</u>	17	<u>2.5Y 6/2</u>	<u>95</u>	7.5YR 5/	<u>/8</u>	<u>5</u>	<u>C</u>	M	lo. sar	nd					
										_					
										_					
										_					
										_					
										-					
										_					
¹ Type	: C= Con	centration, D=Dep	letion, RM=	Reduced Matr	rix, CS=C	overed or C	Coated Sand	Grains. ²	Location: PL:	=Pore	Lining, M=Mat	rix			
Hydri	c Soil Ind	licators: (Applica	ble to all L	RRs, unless	otherwise	e noted.)			Indi	cators	for Problema	atic H	lydric S	Soils ³ :	
	Histosol	(A1)			Sandy F	Redox (S5)				2 cr	n Muck (A10)				
	Histic Ep	ipedon (A2)			Stripped	d Matrix (Se	6)			Rec	Parent Mater	rial (T	F2)		
	Black His	tic (A3)			Loamy	Mucky Min	eral (F1) (ex	cept MLRA 1)		Ver	y Shallow Dar	k Su	rface (T	F12)	
	Hydroge	n Sulfide (A4)			Loamy	Gleyed Ma	trix (F2)			Oth	er (Explain in	Rem	arks)		
	Depleted	Below Dark Surfa	ice (A11)	\boxtimes	Deplete	d Matrix (F	3)								
	Thick Da	rk Surface (A12)			Redox I	Dark Surfac	ce (F6)								
	Sandy M	ucky Mineral (S1)			Deplete	d Dark Sur	face (F7)				of hydrophytic hydrology mu				
	Sandy G	eyed Matrix (S4)			Redox I	Depression	s (F8)				disturbed or pr			it,	
Restr	ictive La	yer (if present):													
Type:															
Depth	(inches)							Hydric Soils	Present?		Y€	es	\boxtimes	No	
Rema	rks:														

HYDROLOGY

Wetla	and Hydrology Indicat	ors:												
Prima	ary Indicators (minimum	of one r	equired	; check	all that	t apply)			Sec	ondary Indicators (2 or r	nore requir	ed)		
	Surface Water (A1)					Water-Stained Leave	s (B9)			Water-Stained Leaves	s (B9)			
\boxtimes	High Water Table (A2)				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B1	0)			
	Water Marks (B1)					Aquatic Invertebrates	(B13)			Dry-Season Water Tal	ble (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Ode	or (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizosphere	es along Living Roots	s (C3)		Geomorphic Position ((D2)			
	Algal Mat or Crust (B4)				Presence of Reduced	l Iron (C4)			Shallow Aquitard (D3)				
	Iron Deposits (B5)					Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5))			
	Surface Soil Cracks (B	36)				Stunted or Stresses F	Plants (D1) (LRR A)			Raised Ant Mounds (D	06) (LRR A)		
	Inundation Visible on	Aerial Im	agery (l	37)		Other (Explain in Ren	narks)			Frost-Heave Hummoc	ks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>surface</u>							
	ation Present? des capillary fringe)	Yes	\boxtimes	No		Depth (inches):	surface	Wetlar	nd Hye	drology Present?	Yes	\boxtimes	No	
Desc	ribe Recorded Data (str	eam gau	ge, mo	nitoring	well, a	erial photos, previous i	nspections), if availat	ble:						
Rema	arks: Inundation in	adjacent	microd	epressio	ons. Flo	owing water observed in	n adjacent astream.							

Data Plot #:	28A-SP
Wetland:	28A

1

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/13/20	07 Revisited 09-27-13
Applicant/Owner: King County		County:	King	
Investigator: Chip Maney, Erik Christensen		State:	WA	
□ 1987 Method	997 WA St. Method			Community ID: PFO
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 28A-SP1
Is the site significantly disturbed (Atypical Situation	on)? Yes	No	х	
Is the area a potential Problem Area?	Yes	No	х	

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 10 feet south of Flag 28A-11.

VE	GET	ATION (Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	09-27-13 Observations Equisetum telmateia 50%
~	1.	Equisetum telmateia	50	Herb	FACW	Rubus armeniacus 50% Alnus rubra 60%
~	2.	Rubus armeniacus	50	Shrub	FACU	
	3.	Rubus parviflorus	5	Shrub	FAC-	
~	4.	Alnus rubra	60	Tree	FAC	
(ex	cept F	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing bgical adaptations to wetlands. "T" indicates trace.	67			

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describ	e in Remarks):		Wetland Hydrology Indicators (Describe in Remarks):
Stream, La	ke, or Tide Gage		Primary Indicators:
Aerial Photo	ograph		Inundated
Other			X Saturated in Upper 12 inches
	ed Data Available		Water Marks Drift Lines
Field Observations:			Sediment Deposits
			Drainage Patterns in Wetlands
Depth of Surface Wate		(in.)	Secondary Indicators (2 or more required):
Depth to Free Water in		(in.)	Oxidized Rhizospheres in Upper 12 inches
Depth to Saturated Soil	: 5	(in.)	Water-Stained Leaves
			Local Soil Survey Data
			Other (Explain in Remarks)
Remarks (As relevant, o	describe recent pre	cipitation, hydrol	ogic modifications, local variations, etc.):

Saturation in the upper 12 inches satisfies wetland hydrology criterion.

		_
	Wetland: 28A	
Project/Site: ELST Re-delineation Date: 11/13/2007	Revisited 09-27	'-13
SOIL Soil Survey Data:		
Map Unit Name: Alderwood and Kitsap Soils Drainage C	ass: Various	
	vations Confirm Mapped Type	
Taxonomy (Subgroup): N/A Yes	No <u>X</u> NA	
Profile Description:		
Depth (Inches)Horizon DesignationMatrix Color (Munsell Moist)Mottle Color 	Contrast Texture, Con Rhizospheres	
0-10 A 10YR 3/1 none none	loam	
10-12 B1 10YR 3/1 none none	loamy sand	
12-18 B2 10YR 2/1 none none	sandy loam	
Hydric Soil Indicators:		
Histosol Listed on Hydric S	oils List	
Histic Epipedon Fe/Mn Concretions		
Sulfidic Odor Organic Streaking	in Sandy Soils	
Aquic or Peraguic Moisture Regime Mottles (Redoximo	rphic Features)	
Reducing ConditionsOther (Explain in F	lemarks)	
X Gleyed or Low-Chroma Colors		
High Organic Content in Surface Layer		
Remarks (Describe soil disturbances, local variations, etc.):		
Low soil matrix colors indicate hydric soils.		
WETLAND DETERMINATION		
-	this Sampling Point Within	a Wetland?
Hydric Soils Present? Yes X No		

Yes X No

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes

Х

No

Data Plot #:

Wetland:

Upland near 28A

28A-SP2

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/13/20	07 Revisited 09-27-13
Applicant/Owner: King County		County:	King	
Investigator: Chip Maney, Erik Christensen		State:	WA	
□ 1987 Method	A St. Method			Community ID: Upland Forest
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 28A-SP2
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	Х	
/				

Remarks (Explain sample location, disturbances, problem areas): This sample plot is located approximately 7 feet east of Flag 28A-11.

09-27-13 Observations **VEGETATION** (> Dominant species are checked) Equisetum telmateia trace Indicator **Plant Species** % Cover Stratum Rubus armeniacus 90% Equisetum telmateia Herb FACW trace 1. Alnus rubra 70% Polystichum munitum 60 Herb FACU Acer macrophyllum 25% 2. 90 FACU Rubus armeniacus Shrub 3. Alnus rubra 70 Tree FAC 4 4. Percent of Dominant Species that are OBL, FACW, or FAC 33

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrogeneration)	ologic modifications, local variations, etc.):

No primary or secondary indicators of hydrology are present. Wetland hydrology criterion is not satisfied.

						Data Plot #:	28A-SP2
						Wetland:	Upland near 28A
roject/Site	e: ELST Re-de	elineation		Date:	11/13/2007	Rev	visited 09-27-13
SOIL							
Soil Surv	ey Data:						
Map Unit	Name: Alderv	vood and Kitsap Soils			Drainage Class	s: Varies	
					Field Observat	ions Confirm N	Aapped Type?
Taxonom	(Subgroup):	N/A			Yes N	No X N	JA
-	escription:						
Depth	Horizon	Matrix Color	Mottle Color		Mottle	т	exture, Concretions,
(Inches)	Designation	(Munsell Moist)	(Munsell Moist)		Abundance/Co		hizospheres, etc.
0-12	A	10YR 3/2	none		none	lo	bam
12-18	В	10YR 4/2	10YR 4/6		few, fine	s	ilt Ioam
H H S A R G H Remarks	educing Condit leyed or Low-C igh Organic Co (Describe soil		. ,	Fe/M Orga Mottl Othe	ed on Hydric Soils In Concretions anic Streaking in a les (Redoximorph er (Explain in Ren	Sandy Soils nic Features)	
WETLA	ND DETER	MINATION					
Hydrophy	tic Vegetation	Present? Y	es No	Х	ls thi	s Sampling P	oint Within a Wetland?
Hydric Sc	oils Present?	Y	es <u>No</u>	Х		Yes	No X
Wetland I	- Hydrology Pres	sent? Y	es No	Х			

Remarks

None of the wetland criteria are met. Therefore, the sample plot is not located in a wetland.

Depth to Free Water in Pit:

Depth to Saturated Soil:

Wetland: 28E WETLAND DETERMINATION (hodified from: 1987 ACCE Wetlands Delineation Manual) Project/Site: ELST Re-delineation Applicant/Owner: King County Investigator: Chi Maney, Erik Christensen 1987 Method Image and the state of the state of the state of the state significantly disturbed (Atypical Situation)? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the wetland approximately 15 feet upslope. VECETATION (< Dominant species are checked) Image and the schema apple is showing in the state in the center of the wetland approximately 15 feet upslope. VECETATION (< Dominant species that are OBL_FACW, or FAC (except FAC) - Include species noted () as showing in the schema is on the schema is showing in the schema is one schema is showing in the schema is one schema is schema in the center of the wetlands. The indicates rate. Percent of Dominant Species that are OBL_FACW, or FAC (except FAC). Include species noted () as showing in the schema is schema is one schema is schema is schema is one cent. Hydrophytic vegetation criterion is sat					Data Plot #: 28B-SP1	
Undified from: 1987 ACOE Wetlands Delineation Manual) Project/Site: ELST Re-delineation Date: 11/9/2007 Revisited 09-27-13 Applicant/Owner: King County County: King Investigator: Chip Maney, Erik Christensen State: WA Is the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes No X Remarks: (Explain sample location, disturbances, problem areas): Tris sample plot is located in the center of the wetland approximately 15 feet upslope. VEGETATION (>Dominant species are checked) Facu Plant Species % Cover Stratum Indicator 2. Rosa pisocarpa 10 Shrub FACU 3. Rubus amentacus 40 Shrub FACU <t< th=""><th></th><th></th><th></th><th></th><th>Wetland: 28B</th></t<>					Wetland: 28B	
Project/Site: ELST Re-delineation Date: 11/9/2007 Revisited 09-27-13 Applicant/Owner: King County County: King Investigator: Chip Maney, Erik Christensen State: WA Is the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the welland approximately 15 feet upslope. VEGETATION (<dominant are="" checked)<="" species="" td=""> Plant Species % Cover Stratum Indicator 2 Rosa pisocarpa 10 Shrub FACU 3 Rubus armeniacus 40 Shrub FACU 4 Sinub FACU Shrub FACU Y 3 Rubus armeniacus 67 Percent of Dominant Species that are OBL, FACW, or FAC Struttes trace.</dominant>	WETLA		ERMINA		N	
Project/Site: ELST Re-delineation Date: 11/9/2007 Revisited 09-27-13 Applicant/Owner: King County County: King Investigator: Chip Maney, Erik Christensen State: WA Is the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the welland approximately 15 feet upslope. VEGETATION (<dominant are="" checked)<="" species="" td=""> Plant Species % Cover Stratum Indicator 2 Rosa pisocarpa 10 Shrub FACU 3 Rubus armeniacus 40 Shrub FACU 4 Sinub FACU Shrub FACU Y 3 Rubus armeniacus 67 Percent of Dominant Species that are OBL, FACW, or FAC Struttes trace.</dominant>	(Modified from: 1987 A		etlands	Delii	neation Manual)	
Implement Section Implement Section Implement Section Investigator: Chip Maney, Erik Christensen State: WA Is the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the wetland approximately 15 feet upslope. VEGETATION (✓Dominant species are checked) Plant species % Cover Stratum Indicator 2. Posa pisocarpa 10 Shrub FACU FACU 3. Rubus armeniacus 40 Shrub FACU 4. Spiraea douglasii 67 Gord Gord Y 1. Phalaris arundinaces 67 Gord Gord Y	(o la		-	
Investigator: Chip Maney, Erik Christensen State: WA ☐ 1987 Method Image: State in the state of th	Project/Site: ELST Re-delineation		Date:	11/9/2	2007 Revisited 09-27-13	
□ 1987 Method ☑ 1997 WA St. Method Community ID: PSS Do Normal Circumstances exist on the site? Yes No Field Plot ID: 28B-SP1 Is the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the wetland approximately 15 feet upslope. VEGETATION (✓Dominant species are checked) Plant Species % Cover Stratum Indicator ✓ 1. Phalaris arundinacea 20 Herb FACW 2. Rosa pisocarpa 10 Strub FAC ✓ 3. Rubus armeniacus 40 Strub FACU ✓ 4. Spirae douglasii 40 Strub FACU Percent of Dominant Species that are OBL, FACW, or FAC Strub FACW PACW ✓ 4. Spirae douglasii 67	Applicant/Owner: King County		County:	Kin	9	
Do Normal Circumstances exist on the site? Yes X No Field Plot ID: 28B-SP1 B the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the wetland approximately 15 feet upslope. Field Plot ID: 28B-SP1 VEGETATION (*Dominant species are checked) Indicator Field Plot is located Plant Species % Cover Stratum Indicator 2 Resa pisocarpa 10 Shrub FAC 3 Rubus ameniacus 40 Shrub FACU Y 3 Rubus ameniacus 40 Shrub FACU Y 4 Spiraea douglasi 67 Shrub FACU Percent of Dominant Species noted (') as showing morphological adaptations to wetlands. "T" indicates trace. 67 Stream, take, or Tide Gage Primary Indicators (Describe in Remarks): HYDROLOGY Stream, Lake, or Tide Gage Primary Indicators: Inundated Aerial Photograph X No Recorded Data Available Primary Indicators:	Investigator: Chip Maney, Erik Christensen		State:	WA	۱ <u>ــــــــــــــــــــــــــــــــــــ</u>	
Is the site significantly disturbed (Atypical Situation)? Yes No X Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the wetland approximately 15 feet upslope. VEGETATION (Dominant species are checked) Plant Species % Cover Stratum Indicator 2. Rosa pisocarpa 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC 3. Rubus armeniacus 40 Shrub FACU V 4. Spiraea douglasi 67 Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (') as showing 67 morphological adaptations to wetlands. "T" indicates trace. Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicates Field Observations: Water Marks Sediment Deposits	☐ 1987 Method	. Method			Community ID: PSS	
Is the area a potential Problem Area? Yes No X Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the wetland approximately 15 feet upslope. VEGETATION (Dominant species are checked) Plant Species % Cover Stratum Indicator 2. Rosa pisocarpa 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC 3. Rubus armeniacus 40 Shrub FACU 4. Spiraea douglasii 40 Shrub FACW V 4. Spiraea douglasii 67 Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (') as showing 67 morphological adaptations to wetlands. 'T' indicates trace. Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators: Aerial Photograph Inundated Cher X No Recorded Data Available Primary Indicators: Field Observations: Sediment Deposits	Do Normal Circumstances exist on the site?	′es <u>X</u>	No		Field Plot ID: 28B-SP1	
Remarks (Explain sample location, disturbances, problem areas): This sample plot is located in the center of the wetland approximately 15 feet upslope. VEGETATION (*Dominant species are checked) Plant Species % Cover Stratum Indicator 2. Rosa pisocarpa 10 Shrub FAC 3. Rubus armeniacus 40 Shrub FACU Y 4. Spraea douglasii 40 Shrub FACU Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HVDROLOGY Wetland Hydrology Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators: Inundated Aerial Photograph Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Sediment Deposits	Is the site significantly disturbed (Atypical Situation)? Y	′es	No	Х		
This sample plot is located in the center of the welland approximately 15 feet upslope. VEGETATION (<dominant are="" checked)<="" species="" th=""> Plant Species % Cover Stratum Indicator 2. Rosa pisocarpa 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC 3. Rubus armeniacus 40 Shrub FACU 4. Spiraea douglasii 40 Shrub FACU 2. As a pisocarpa 67 For the percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Inundated Querter Marks Other X No Recorded Data Available Stream, Lake, or Tide Gage Primary Indicators: <td co<="" td=""><td>Is the area a potential Problem Area?</td><td>'es</td><td>No</td><td>х</td><td></td></td></dominant>	<td>Is the area a potential Problem Area?</td> <td>'es</td> <td>No</td> <td>х</td> <td></td>	Is the area a potential Problem Area?	'es	No	х	
This sample plot is located in the center of the welland approximately 15 feet upslope. VEGETATION (<dominant are="" checked)<="" species="" td=""> Plant Species % Cover Stratum Indicator 2. Rosa pisocarpa 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC 3. Rubus armeniacus 40 Shrub FACU 4. Spiraea douglasii 40 Shrub FACU Y 4. Spiraea douglasii 67 Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Stream, Lake, or Tide Gage Primary Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Inundated X Saturated in Upper 12 inches Water Marks Water Marks Drift Lines Sediment Deposits Field Observations: Sediment Deposits Sediment Deposits</dominant>	Remarks (Explain sample location, disturbances, problem	areas):				
VEGETATION (,	15 feet un	elona		
Plant Species % Cover Stratum Indicator • 1. Phalaris arundinacea 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC • 3. Rubus armeniacus 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACW Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks): Image: the percent of both or part in the percent of dot of the percent of the	The sample plot is located in the center of the welland appr	onnaioly	ie ieer up	siope.		
Plant Species % Cover Stratum Indicator • 1. Phalaris arundinacea 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC • 3. Rubus armeniacus 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACU Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Primary Indicators (Describe in Remarks):						
Plant Species % Cover Stratum Indicator • 1. Phalaris arundinacea 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC • 3. Rubus armeniacus 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACU Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Primary Indicators (Describe in Remarks):						
Plant Species % Cover Stratum Indicator • 1. Phalaris arundinacea 20 Herb FACW 2. Rosa pisocarpa 10 Shrub FAC • 3. Rubus armeniacus 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACU • 4. Spiraea douglasii 40 Shrub FACU Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Primary Indicators (Describe in Remarks):						
 ✓ 1. Phalaris arundinacea 20 Herb FACW Rosa pisocarpa 10 Shrub FAC 3. Rubus armeniacus 40 Shrub FACU 41 Spiraea douglasii 40 Shrub FACW Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing 67 morphological adaptations to wetlands. "T" indicates trace. Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X. No Recorded Data Available Field Observations: 		% Cov	or Stratu	m	Indicator	
2. Rosa pisocarpa 10 Shrub FAC ✓ 3. Rubus armeniacus 40 Shrub FACU ✓ 4. Spiraea douglasii 40 Shrub FACU Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks):						
✓ 3. Rubus armeniacus 40 Shrub FACU ✓ 4. Spiraea douglasii 40 Shrub FACU Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators: Inundated Other X No Recorded Data Available Water Marks Field Observations: Drift Lines Sediment Deposits	· · · · · · · · · · · · · · · · · · ·				·	
Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators: Inundated Other X Saturated in Upper 12 inches X No Recorded Data Available Drift Lines Field Observations: Sediment Deposits						
(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 67 Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators: Inundated Other X Saturated in Upper 12 inches X No Recorded Data Available Drift Lines Field Observations: Sediment Deposits	✓ 4. Spiraea douglasii	40	Shrub		FACW	
Morphological adaptations to wetlands. "T" indicates trace. Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators: Aerial Photograph Inundated Other X X No Recorded Data Available Field Observations: Drift Lines	Percent of Dominant Species that are OBL, FACW, or F	FAC				
Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators Aerial Photograph Inundated Other X X No Recorded Data Available Field Observations: Drift Lines			7			
The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied. HYDROLOGY Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks): Stream, Lake, or Tide Gage Primary Indicators: Aerial Photograph Inundated Other X X No Recorded Data Available Field Observations: Drift Lines	morphological adaptations to wetlands. "I" indicates trace.					
HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available Field Observations: Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators: Mathematical Photograph Image: Stream of the photograph	•			,		
Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks):	The percent of dominant species that are hydrophytic is gre	ater than 5	50 percent	. Hydi	rophytic vegetation criterion is satisfied.	
Recorded Data (Describe in Remarks): Wetland Hydrology Indicators (Describe in Remarks):	HYDBOLOGY					
Stream, Lake, or Tide Gage Primary Indicators: Aerial Photograph Inundated Other X X No Recorded Data Available Field Observations: Sediment Deposits		v	Vetland H	vdrolo	nav Indicators (Describe in Remarks):	
Aerial Photograph Inundated Other X X No Recorded Data Available Field Observations: Sediment Deposits		•				
Other X Saturated in Upper 12 inches X No Recorded Data Available Water Marks Field Observations: Drift Lines Sediment Deposits Sediment Deposits			· ····ary			
X No Recorded Data Available Water Marks Field Observations: Sediment Deposits			x	(
Field Observations: Drift Lines				、		
Sediment Deposits						
Drainage Patterns in Wetlands	Field Observations:				Sediment Deposits	
					Drainage Patterns in Wetlands	
Depth of Surface Water: none (in.) Secondary Indicators (2 or more required):	Depth of Surface Water: none (in)		Second	lanv l	ndicators (2 or more required):	

Secondary	Indicators	(2 or	more	required):
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Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data

Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): Saturation in the upper 12 inches satisfies wetland hydrology criterion.

(in.)

(in.)

none

4

						Data Plot # Wetland:	#: <u>28B-SP1</u> 28B	
						_		
roject/Site	e: ELST Re-de	elineation		Date:	11/9/2007	R	evisited 09-27-13	
SOIL Soil Surv	ey Data:							
Map Unit	Name: Mixed	Alluvial Land			Drainage Cla	ass: Well drain	ed to very poorly dra	lined
					Field Observ	ations Confirm	Mapped Type?	
Taxonomy	(Subgroup):	N/A			Yes	No X	NA	
-								
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/0	Contrast	Texture, Concretions Rhizospheres, etc.	s,
0-12	Α	10YR 3/1	none		none		silt loam	
12-18	В	10YR 3/1	2.5YR 4/6		coarse, commo	n	silt loam	
н н s а п	il Indicators: istosol istic Epipedon ulfidic Odor quic or Peragui educing Condit leyed or Low-C			Fe/M Orga Mottl	d on Hydric Sc In Concretions unic Streaking i les (Redoximor er (Explain in Re	n Sandy Soils phic Features)		
		ntent in Surface Laye	r					
		disturbances, local va h and roof shingles ar		source o	of the mottles.	Low chroma in	dicates hydric soil.	
WETLA	ND DETER	MINATION						
Hydrophy	tic Vegetation	Present?	Yes X No		ls t	his Sampling	Point Within a Wetl	land?

Hydric Soils Present?	Yes	Х	No
Wetland Hydrology Present?	Yes	Х	No

is this Samp	ning Po	Sint w	ithin a wettar	a
Yes	Х	No		

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #:

Wetland:

Upland near 28B

28B-SP2

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/9/200	7		_
Applicant/Owner: King County		County:	King			
Investigator: Chip Maney, Erik Christensen		State:	WA			_
□ 1987 Method	A St. Method			Community ID:	Upland Shrub	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 2	28B-SP2	
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х			
Is the area a potential Problem Area?	Yes	No	Х			
Remarks (Explain sample location, disturbances, prob	lem areas):					

VEGETATION (Dominant species are checked) Plant Species Stratum Indicator % Cover Equisetum telmateia 5 Herb FACW 1. Phalaris arundinacea 10 Herb FACW 2. 90 Shrub FACU Rubus armeniacus 6 3. Acer macrophyllum 50 Tree FACU 4 4. Percent of **Dominant Species** that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 0

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrologi <i>No primary or secondary indicators of hydrology are present. W</i>	

							Data Plot #:	28B-SP2
							Wetland:	Upland near 28B
					_			
'roject/Site	ELST Re-de	elineation			Date:	11/9/2007		
SOIL Soil Surve	ey Data:							
Map Unit N	Name: Alderw	wood gravelly sandy	loam 15 to	30% slopes	6	Drainage Cla	ss: Moderately	well drained
						Field Observa	ations Confirm N	Aapped Type?
Taxonomy	(Subgroup):	Entic Durochrepts				Yes	No <u>X</u> N	JA
Profile De	scription:							
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)		le Color nsell Moist)		Mottle Abundance/C		exture, Concretions, hizospheres, etc.
0-15	А	10YR 3/2	none			none	lo	bam
Hi Hi Su Ac Re Gi Hi Remarks	educing Condit leyed or Low-C gh Organic Co (Describe soil		variations,	,	Fe/M Orga Mottle Othe	d on Hydric Soi n Concretions nic Streaking ir es (Redoximorj r (Explain in Re	n Sandy Soils ohic Features)	
	ND DETERI							
	tic Vegetation		Yes	No	х	ls ti	nis Sampling P	oint Within a Wetland
	ils Present?		Yes	No	X			
				—			Yes	No <u>X</u>

Remarks

Wetland Hydrology Present?

Hydrophytic vegetation, hydric soil, and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

Yes <u>No X</u>

				Data Plot #:	28C-SP1
				Wetland:	28C
WET	LAND DET	ERMINA	ATION		
(Modified from: 19	87 ACOE W	etlands	Deline	ation Manual)	
Project/Site: ELST Re-delineation		Date:	11/13/20	007 Re	visited 09-27-13
Applicant/Owner: King County		County:	King		
Investigator: Chip Maney		State:	WA		
□ 1987 Method	A St. Method			Community ID:	PEM
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 28	3C-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes	No	х		
Is the area a potential Problem Area?	Yes	No	Х		
Remarks (Explain sample location, disturbances, pro	blem areas):				

This sample plot is located 15 feet from the north edge of the wetland, less than half way up the eastern slope of the wetland, on the northern edge of the wetland bounded by a small shed and on the eastern edge by a driveway/parking area. No suitable location for an upland plot was available for this wetland.

	Plant Species	% Cover	Stratum	Indicator
1.	Unkown ornamental	25		
2.	Athyrium filix-femina	40	Herb	FAC
З.	Cardamine oligosperma	30	Herb	FAC
4.	Equisetum telmateia	20	Herb	FACW
5.	Rubus armeniacus	5	Shrub	FACU
6.	Sorbus aucuparia	10	Tree	NL

morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in R	lemarks):	Wetland Hydrology Indicators (Describe in Remarks):						
Stream, Lake, or	Tide Gage	Primary Indicators:						
Aerial Photograph Other X No Recorded Dat		Inundated X Saturated in Upper 12 inches Water Marks Drift Lines						
Field Observations:		Drift Lines Sediment Deposits Drainage Patterns in Wetlands						
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	none (in.) 9 (in.) surface (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)						
,	be recent precipitation, hydro	ologic modifications, local variations, etc.):						

Saturation in the upper 12 inches satisfies wetland hydrology criterion.

							Data F	101 #.	28C-SP1
							Wetla	nd:	28C
Project/Site	ELST Re-de	lineation			Date:	11/13/200	7	Revis	ited 09-27-13
SOIL Soil Surve	ey Data:								
Map Unit M	Name: Mixed	Alluvial Land				Drainage (Class: Well	drained t	o very poorly drained
						Field Obse	ervations Co	nfirm Ma	pped Type?
Taxonomv	(Subgroup):	N/A				Yes	No >	(NA	
Profile De	· · · · -							<u> </u>	
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle (Munse	Color ell Moist)		Mottle Abundanc	e/Contrast		ture, Concretions, zospheres, etc.
0-12	Α	10YR 3/1	none			none		silt	loam
12-18	A2	10YR 3/1	none			none		grav	velly loam
Hydric So	il Indicators:								
	educing Conditi leyed or Low-C gh Organic Co (Describe soil		variations, etc	,	Fe/M Orgai Mottle Other		ns g in Sandy S Iorphic Feati		
Hii Hii Su Su Ac Ac X GI Hii Remarks Low chron	stic Epipedon ulfidic Odor quic or Peraguie educing Conditi leyed or Low-C gh Organic Con (Describe soil <i>na soil matrix ir</i>	ons hroma Colors ntent in Surface Lay disturbances, local <i>dicates hydric soils</i>	variations, etc	,	Fe/M Orgai Mottle Other	n Concretion nic Streaking es (Redoxim	ns g in Sandy S Iorphic Feati		
Hii Hii Su Su Ac Ac X GI Hii Remarks Low chron	stic Epipedon ulfidic Odor quic or Peragui educing Conditi leyed or Low-C gh Organic Con (Describe soil	ons hroma Colors ntent in Surface Lay disturbances, local <i>dicates hydric soils</i>	variations, etc	,	Fe/M Orgai Mottle Other	n Concretion nic Streaking es (Redoxim r (Explain in	ns g in Sandy S lorphic Featu Remarks)	ures)	
Hii Hii Su Su Ac Re X GI Hiy Remarks Low chron	stic Epipedon ulfidic Odor quic or Peraguie educing Conditi leyed or Low-C gh Organic Con (Describe soil <i>na soil matrix ir</i>	hroma Colors hroma Colors ntent in Surface Lay disturbances, local disturbances, local dicates hydric soils	variations, etc	,	Fe/M Orgai Mottle Other	n Concretion nic Streaking es (Redoxim r (Explain in	ns g in Sandy S lorphic Featu Remarks)	ures)	nt Within a Wetland?

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes X No

				We	etland:	28D
WETLAI	ND DETE	RMINA	TION			
(Modified from: 1987 A	COE We	tlands	Deline	ation Ma	anual)	
Project/Site: ELST Re-delineation		Date:	11/13/20)07	Revis	sited 09-27-13
Applicant/Owner: King County		County:	King			
Investigator: Chipper Maney, Erik Christensen		State:	WA			
□ 1987 Method	. Method			Commu	nity ID: P	SS
Do Normal Circumstances exist on the site? Y	′es X	No		Field Pl	ot ID: 28D)-SP1
Is the site significantly disturbed (Atypical Situation)? Y	′es	No	Х			
Is the area a potential Problem Area? Y	'es	No	Х			
Remarks (Explain sample location, disturbances, problem	areas):	-				
Two wetlands were named 28B. This sample plot has been is located at station 452+00. The sample plot is located in th south east of Flag 28D-1.	0					
VEGETATION (> Dominant species are checked)						bservations
Plant Species	% Cove	er Stratu	m Inc	dicator		s arvensis 30% iliatum 15%
1. Convolvulus arvensis	10	Herb	NL		•	telmateia 20%
2. Epilobium ciliatum	15	Herb	FA			eniacus 20%
✓ 3. Equisetum telmateia	20	Herb	FA	CW	Phalaris aru	Indinacea 40%
✓ 4. Rubus armeniacus	40	Shrub	FA	CU		

Data Plot #:

28D-SP1

Percent of **Dominant Species** that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

Although Rubus armeniacus has an indicator of FACU, it often grows hydrophytically. Rubus armeniacus is believed to be growing hydrophytically in this sample plot because saturation occurs in the upper 12 inches.

100

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):						
Stream, Lake, or Tide Gage	Primary Indicators:						
Aerial Photograph	Inundated						
Other	X Saturated in Upper 12 inches						
X No Recorded Data Available Field Observations:	Water Marks Drift Lines Sediment Dependent						
	Sediment Deposits Drainage Patterns in Wetlands						
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:surface(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)						
Remarks (As relevant, describe recent precipitation, hydro	plogic modifications, local variations, etc.):						

Saturation in the upper 12 inches satisfies the wetland hydrology criterion.

09-27-13 Observations - Soil saturation at surface.

						Data Plot #:	28D-SP1
						Wetland:	28D
roject/Site	e: ELST Re-de	elineation		Date:	11/13/2007	Rev	visited 09-27-13
SOIL Soil Surv	ey Data:						
Map Unit	Name: Mixed	Alluvial Land			Drainage Clas	s: Well drained	d to very poorly drained
					Field Observa	tions Confirm N	Apped Type?
Ταχοροφι	/ (Subgroup):	N/A			Yes	No X N	IA
	escription:						
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co		exture, Concretions, hizospheres, etc.
0-18	A	10YR 2/1	none		none	g	ravelly loam
H H S A R X G H	educing Condit leyed or Low-C igh Organic Co			Fe/M Orga Mott	d on Hydric Soil: In Concretions unic Streaking in les (Redoximorp er (Explain in Rer	Sandy Soils hic Features)	
		tisfies the hydric soil o					
					la th	ic Compling D	aint Within a Watlanda
	tic Vegetation		Yes <u>X</u> No		is th	is Samping P	oint Within a Wetland?
inyunic 50	nis Fresent?		Yes <u>X</u> No			Yes X	No

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes <u>X</u> No

Data Plot #: 28D-SP2

Wetland:

Upland near 28D

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation					11/13/2007		Revisited 09-27-13		
Applicant/Owner: King County			County:	King					
Investigator: Chipper Maney, Erik Chr	istensen			State:	WA				
1987 Method	🖌 1997 WA	A St. Met	hod			Community ID	: Upland Shrub		
Do Normal Circumstances exist on the	site?	Yes	Х	No		Field Plot ID:	28D-SP2		
Is the site significantly disturbed (Atypic	al Situation)?	Yes		No	Х				
Is the area a potential Problem Area?		Yes		No	Х				

Remarks (Explain sample location, disturbances, problem areas):

Two wetlands were named 28B. This sample plot is has been changed from 28B to 28D to avoid wetland name duplication. This wetland is located at station 452+00. This sample plot is located approximately 5 feet north of Flag 28D-1.

VE	GE	TATION (> Dominant species are checked)				09-27-13 Observations Equisetum telmateia 20%
		Plant Species	% Cover	Stratum	Indicator	Hedera helix 60%
~	1.	Equisetum telmateia	20	Herb	FACW	Lotus corniculatus 40%
	2.	Hedera helix	15	Herb	NL	Rubus armeniacus 30%
~	З.	Holcus lanatus	20	Herb	FAC	
	4.	Juncus spp.	10	Herb	Unk	
	5.	Lotus corniculatus	10	Herb	FAC	
•	6.	Rubus armeniacus	40	Shrub	FACU	
(ex	cept l	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing ogical adaptations to wetlands. "T" indicates trace.	67			

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):						
Stream, Lake, or Tide Gage	Primary Indicators:						
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands						
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)						
Remarks (As relevant, describe recent precipitation, hydro	logic modifications, local variations, etc.):						

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.) *No indicators of wetland hydrology are present. Wetland hydrology criterion is not satisfied.*

09-27-13 Observations - No indicators of wetland hydrology present.

						Data Plot	#: 28D-SP2
						Wetland:	Upland near 28D
voject/Site	e: ELST Re-de	elineation		Date:	11/13/2007	R	evisited 09-27-13
SOIL Soil Surv	ey Data:						
Map Unit	Name: Mixed	Alluvial Land			Drainage Cla	ss: Well drain	ned to very poorly drained
					Field Observa	ations Confirm	n Mapped Type?
Taxonomy	y (Subgroup):	N/A			Yes	No <u>X</u>	NA
Profile De	escription:						
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/C	Contrast	Texture, Concretions, Rhizospheres, etc.
0-4							fill
4-18	A	10YR 2/1	none		none		gravelly loam
Hvdric So	oil Indicators:						
•	istosol			Liste	d on Hydric Soi	ls List	
Н	istic Epipedon			Fe/M	In Concretions		
	ulfidic Odor			Orga	inic Streaking ir	n Sandy Soils	
5		c Moisture Regime		Mottl	es (Redoximor	ohic Features))
	quic or Peragui						
A	quic or Peragui educing Condit	ions		Othe	r (Explain in Re	emarks)	
A R				Othe	r (Explain in Re	emarks)	

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No		Is this Sampling Point Within a Wetland				
Hydric Soils Present?	Yes	No	Х	Yes	No	x		
Wetland Hydrology Present?	Yes	No	X	100	_ 110			

Remarks

Hydric soil and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

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

Project Site:	ELST - S	outh S	ammamish Seg	ment		City	y/County:	Sam	mamis	sh/King	Sampling Da	ate:	<u>11-0</u>	1-13	
Applicant/Owner:	King Cou	nty								State: WA	Sampling Po	oint:	<u>W28</u>	BE-SP	<u>'1</u>
Investigator(s):	C. Worsle	ey; M.	<u>Maynard</u>					Se	ction,	Township, Rang	je: <u>S29, T2</u>	5N, R06E			
Landform (hillslope, ter	race, etc.)	: <u>d</u>	lepression			Local relief	(concave,	, conve	x, non	e): <u>concave</u>		Slope	: (%):	<u>25</u>	
Subregion (LRR):	<u>A</u>			La	t:			Long:		_	I	Datum:			
Soil Map Unit Name:	Alderwo	od an	d Kitsap soils, ve	ery ste	ep					NWI class	sification:	PEM			
Are climatic / hydrologi	c conditior	ns on t	he site typical fo	r this t	time of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	significantly dist	urbed?	Are "Nor	mal Cir	cumst	ances" present?		Yes	\boxtimes	No	
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	naturally problem	matic?	(If neede	ed, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
Remarks: Sample plot is located on east side of ditch ir	wetlan	d, app	oroxim	ately 6	b feet east of trail, 20 feet west of large Acer macrophyllum.				

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: NA)	Absolute % Cover	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:		
1				Number of Dominant Species	2 (4)	
2				That Are OBL, FACW, or FAC:	<u>2</u> (A)	
3				Total Number of Dominant	<u>2</u> (B)	
4				Species Across All Strata:	<u> </u>	
50% =, 20% =		= Total Cove	۶r	Percent of Dominant Species	100 (A/B)	3
Sapling/Shrub Stratum (Plot size: NA)				That Are OBL, FACW, or FAC:		'
1				Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species >	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =		= Total Cove	۶r	FACU species	x4 =	
Herb Stratum (Plot size: <u>3 feet, confined to wetland</u> boundary)				UPL species	x5 =	
1. <u>Phalaris arundinacea</u>	<u>75</u>	<u>yes</u>	FACW	Column Totals:(A)	(B)	
2. <u>Veronica americana</u>	<u>45</u>	<u>yes</u>	<u>OBL</u>	Prevalence Index = B/A =		
3. <u>Calystegia sepium</u>	<u>20</u>	no	FAC	Hydrophytic Vegetation Indicators:		
4				1 – Rapid Test for Hydrophytic Vegetation	n	
5				2 - Dominance Test is >50%		
6				□ 3 - Prevalence Index is <u><</u> 3.0 ¹		
7				4 - Morphological Adaptations ¹ (Provide s	supporting	
8				data in Remarks or on a separate she	et)	
9				5 - Wetland Non-Vascular Plants ¹		
10				Problematic Hydrophytic Vegetation ¹ (Exp	plain)	
11					,	
50% = <u>70</u> , 20% = <u>28</u>	140	= Total Cove	er	¹ Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic.	must	
Woody Vine Stratum (Plot size:)				be present, unicos disturbed or presionado.		
1						
2				Hydrophytic		
50% =, 20% =		= Total Cove	er	Vegetation Yes 🖂	No 🗌	
% Bare Ground in Herb Stratum 0				Present?		
-						
Remarks: Species with less than 5% cover a	re not consid	lered dominant	i.			

Project Site: ELST - South Sammamish

SOIL

SOIL										Sa	ampling F	Point: <u>W2</u>	8E-SP1		
Profile Desc	ription: (Describe to	the depth	needed to d	ocument t	the indicato	or or conf	irm the absend	ce of in	ndicato	ors.)					
Depth	Matrix				Redox Feat	ures									
(inches)	Color (moist)	%	Color (mo	ist)	%	Type ¹	Loc ²	Т	exture	_			Remarks	6	
<u>0-6</u>	<u>10YR 2/1</u>	100	=		-	-		s	a. loar	<u>n</u>					
<u>6-18</u>	<u>10YR 3/1</u>	<u>95</u>	<u>10YR 3/</u>	<u>6</u>	<u>5</u>	<u>C</u>	M	<u>gr.</u>	sa. loa	<u>am</u>	with cob	bles			
				-											
				-											
				-											
				-											
				-											
				-											
¹ Type: C= Co	ncentration, D=Deple	etion, RM=I	Reduced Matr	ix, CS=Co	vered or Co	ated Sand	d Grains. ² l	Locatio	n: PL=	Pore L	ining, M	=Matrix			
Hydric Soil I	ndicators: (Applical	ble to all L	RRs, unless o	otherwise	noted.)				Indic	ators	for Prob	lematic I	Hydric S	oils ³ :	
Histoso	l (A1)			Sandy R	edox (S5)					2 cm	n Muck (/	A10)			
Histic E	pipedon (A2)			Stripped	Matrix (S6)					Red	Parent I	Material (TF2)		
Black H	listic (A3)			Loamy N	lucky Minera	al (F1) (e >	(cept MLRA 1)			Very	/ Shallow	/ Dark Su	rface (T	-12)	
☐ Hydrog	en Sulfide (A4)			Loamy G	Bleyed Matriz	x (F2)				Othe	er (Expla	in in Rem	arks)		
Deplete	ed Below Dark Surface	ce (A11)		Depleted	Matrix (F3)										
Thick D	ark Surface (A12)		\boxtimes	Redox D	ark Surface	(F6)									
□ Sandy	Mucky Mineral (S1)			Depleted	I Dark Surfa	ce (F7)						ohytic veg			
□ Sandy	Gleyed Matrix (S4)			Redox D	epressions	(F8)						or proble		ι,	
Restrictive L	ayer (if present):														
Туре:															
Depth (inches	s):						Hydric Soils	Prese	nt?			Yes	\boxtimes	No	
Remarks:															
Histoso Histic E Black H Hydrog Deplete Sandy Sandy Restrictive L Type: Depth (inchest	el (A1) ipipedon (A2) listic (A3) en Sulfide (A4) ed Below Dark Surfac Dark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) ayer (if present):			Sandy R Stripped Loamy M Loamy G Depleted Redox D Depleted	edox (S5) Matrix (S6) Iucky Minera Bleyed Matrix I Matrix (F3) ark Surface I Dark Surfa	x (F2) (F6) ce (F7)			3Indic wr	2 cm Red Very Othe	n Muck (/ Parent I / Shallow er (Expla of hydrog hydrolog	A10) / Dark Su in in Rem bhytic veç y must b or proble	TF2) Inface (The Inarks) getation a e present matic.	=12) and t,	

HYDROLOGY

Wetl	and Hydrology Indicat	ors:												
Prim	ary Indicators (minimum	of one re	equired	; check	all that	t apply)			Sec	ondary Indicators (2 or	more requir	ed)		
	Surface Water (A1)					Water-Stained Leave	s (B9)			Water-Stained Leave	s (B9)			
	High Water Table (A2))				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B	10)			
	Water Marks (B1)					Aquatic Invertebrates	; (B13)			Dry-Season Water Ta	able (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Od	or (C1)			Saturation Visible on	Aerial Image	ery (CS	9)	
	Drift Deposits (B3)					Oxidized Rhizosphere	es along Living Roots	s (C3)		Geomorphic Position	(D2)			
	Algal Mat or Crust (B4	ł)				Presence of Reduced	d Iron (C4)			Shallow Aquitard (D3))			
	Iron Deposits (B5)					Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5	5)			
	Surface Soil Cracks (E	36)				Stunted or Stresses F	Plants (D1) (LRR A)			Raised Ant Mounds (I	D6) (LRR A)		
	Inundation Visible on	Aerial Im	agery (I	B7)		Other (Explain in Ren	narks)			Frost-Heave Hummoo	cks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>15</u>							
	ration Present? Ides capillary fringe)	Yes		No		Depth (inches):	surface	Wetlar	nd Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ge, moi	nitoring	well, a	erial photos, previous i	nspections), if availat	ole:						
Rem	arks:													

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

Project Site:	ELST - S	outh S	ammamish Seg	ment		City	/County:	Sam	mamis	sh/King	Sampling Da	ate:	<u>11-0</u>	1-13	
Applicant/Owner:	King Cou	nty								State: <u>WA</u>	Sampling Po	pint:	<u>W28</u>	BE-SP	2
Investigator(s):	C. Worsle	ey; M.	Maynard					Se	ection,	Township, Rang	ge: <u>S29, T2</u>	5N, R06E			
Landform (hillslope, ter	race, etc.)): <u>h</u>	illslope			Local relief	(concave,	conve	x, non	e): <u>convex</u>		Slope	e (%):	<u>15</u>	
Subregion (LRR):	<u>A</u>			La	t:			Long:		_	I	Datum:			
Soil Map Unit Name:	Alderwo	od and	d Kitsap soils, ve	ery ste	ep					NWI class	sification:	NA			
Are climatic / hydrologi	c conditio	ns on t	he site typical fo	or this	time of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	\Box ,	significantly dist	urbed?	Are "Nor	mal Cir	cumst	ances" present?		Yes	\boxtimes	No	
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	naturally probler	matic?	(If neede	d, expl	ain an	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes		No	\boxtimes						
Hydric Soil Present?	Yes		No		Is the Sampled Area within a Wetland?	Yes		No	\boxtimes	
Wetland Hydrology Present?	Yes		No	\boxtimes						
Remarks: Sample plot is located upslope (east) of ditch	and ap	Remarks: Sample plot is located upslope (east) of ditch and approximately 20 feet northwest of large Acer macrophyllum.								

appr ыу upsiope (easi) (opny ihie h

VEGETATION – Use scientific names of plants Absolute Dominant Indicator Tree Stratum (Plot size: 30 feet) Dominance Test Worksheet: % Cover Species? Status 1. Acer macrophyllum FACU <u>40</u> <u>yes</u> Number of Dominant Species 4 (A) That Are OBL, FACW, or FAC: 2. Alnus rubra 15 ves FAC 3. Total Number of Dominant (B) 8 Species Across All Strata: 4. _____ 50% = <u>28</u>, 20% = <u>11</u> 55 = Total Cover Percent of Dominant Species (A/B) 50 That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: 10 feet) 1. Rosa pisocarpa <u>15</u> FAC Prevalence Index worksheet: yes FACU 2. Rubus parviflorus 15 Total % Cover of: Multiply by: ves 3. Corylus cornuta 8 <u>ves</u> FACU OBL species x1 = 4. FACW species x2 = FAC species 5. x3 = 50% = <u>19</u>, 20% = <u>8</u> <u>38</u> = Total Cover FACU species x4 = Herb Stratum (Plot size: 3 feet) UPL species x5 = 1. Equisetum telmateia 5 ves FACW _ (A) (B) Column Totals: FAC Prevalence Index = B/A = 2. Calystegia sepium 5 yes 3. Hydrophytic Vegetation Indicators: □ 1 – Rapid Test for Hydrophytic Vegetation 4. 2 - Dominance Test is >50% 5. _____ \Box 3 - Prevalence Index is $\leq 3.0^1$ 6. 7. 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 8. 9. 5 - Wetland Non-Vascular Plants¹ 10. ____ Problematic Hydrophytic Vegetation¹ (Explain) 11. ____ ¹Indicators of hydric soil and wetland hydrology must 50% = <u>5</u>, 20% = <u>2</u> 10 = Total Cover be present, unless disturbed or problematic. Woody Vine Stratum (Plot size: 10 feet) 1. Rubus armeniacus FACU 75 <u>yes</u> Hydrophytic 2. Vegetation Yes No \boxtimes 50% = , 20% = = Total Cover 75 Present? % Bare Ground in Herb Stratum 0 Species with less than 5% cover are not considered dominant. Remarks:

Project Site: ELST - South Sammamish

SOIL

SOI	L										S	Sampling F	Point: <u>W2</u>	8E-SP2		
Profi	ile Descript	ion: (Describe t	o the depth	n needed to d	ocument the	indicato	r or confi	irm the absen	nce o	of indicate	ors.)					
D	epth	Matrix			Re	dox Feat	ures									
(inch	nes) (Color (moist)	%	Color (mo	vist) %	6	Type ¹	Loc ²		Texture				Remark	s	
	0-5	<u>10YR 2/1</u>	100	=			-		-	<u>gr. sa. lo</u>	am	with cob	bles			
5	<u>5-18</u>	<u>10YR 3/2</u>	100	=	=		<u> </u>	<u>-</u>		<u>gr. sa. lo</u>	<u>am</u>	with cob	bles			
											-					
_											-					
-											-	<u> </u>				
-											-					
_											-					
_											-					
1Туре	e: C= Conce	ntration, D=Depl	letion, RM=	Reduced Matr	ix, CS=Cover	ed or Coa	ated Sand	Grains.	² Loc	ation: PL=	Pore	Lining, M	=Matrix			
Hydr	ric Soil Indi	cators: (Applica	ble to all L	RRs, unless o	otherwise no	ted.)				Indic	ators	for Prob	lematic	Hydric S	Soils ³ :	
	Histosol (A	1)			Sandy Redo	ox (S5)					2 c	m Muck (/	A10)			
	Histic Epip	edon (A2)			Stripped Ma	atrix (S6)					Re	d Parent I	Material (TF2)		
	Black Histi	c (A3)			Loamy Muc	ky Minera	al (F1) (ex	cept MLRA 1)		Ve	ry Shallow	/ Dark Su	Irface (T	F12)	
	Hydrogen	Sulfide (A4)			Loamy Gley	ed Matrix	: (F2)				Oth	ner (Expla	in in Rem	narks)		
	Depleted E	elow Dark Surfa	ce (A11)		Depleted M	atrix (F3)										
	Thick Dark	Surface (A12)			Redox Dark	Surface	(F6)									
	Sandy Muo	ky Mineral (S1)			Depleted Da	ark Surfac	ce (F7)					of hydrop hydrolog				
	Sandy Gle	yed Matrix (S4)			Redox Depr	ressions (F8)					disturbed			π,	
Rest	rictive Laye	er (if present):														
Туре	:															
Dept	h (inches):							Hydric Soils	s Pre	esent?			Yes		No	\boxtimes
Rem	arks:															

HYDROLOGY

Wetl	and Hydrology Indicat	ors:											
Prima	ary Indicators (minimum	of one re	equired	; check	all that	t apply)		Sec	ondary Indicators (2 or r	more requir	ed)		
	Surface Water (A1)					Water-Stained Leaves (B9)			Water-Stained Leaves	s (B9)			
	High Water Table (A2)				(except MLRA 1, 2, 4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
	Saturation (A3)					Salt Crust (B11)			Drainage Patterns (B1	0)			
	Water Marks (B1)					Aquatic Invertebrates (B13)			Dry-Season Water Ta	ble (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Odor (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizospheres along Living Roots	s (C3)		Geomorphic Position ((D2)			
	Algal Mat or Crust (B4	4)				Presence of Reduced Iron (C4)			Shallow Aquitard (D3)				
	Iron Deposits (B5)					Recent Iron Reduction in Tilled Soils (C6)			FAC-Neutral Test (D5)			
	Surface Soil Cracks (B	36)				Stunted or Stresses Plants (D1) (LRR A)			Raised Ant Mounds (D	06) (LRR A)		
	Inundation Visible on	Aerial Im	agery (I	B7)		Other (Explain in Remarks)			Frost-Heave Hummoc	ks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)									
Field	Observations:												
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):							
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):							
	ation Present?	Yes		No	\boxtimes	Depth (inches):	Wetlar	nd Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ge, moi	nitoring	well, a	erial photos, previous inspections), if availab	ble:						
Rem	arks:												

Data Plot #: 29B-SP1 29B

Wetland:

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/8/2007	Revisited 03-20-14
Applicant/Owner: King County		County:	King County	
Investigator: Linda Krippner/Rachel Hulscher		State:	WA	
□ 1987 Method	A St. Method		Cor	nmunity ID: PEM
Do Normal Circumstances exist on the site?	Yes X	No	— Fiel	d Plot ID: 29B-SP1
Is the site significantly disturbed (Atypical Situation)?	Yes X	No		
Is the area a potential Problem Area?	Yes	No	Х	
Remarks (Explain sample location, disturbances, prob	olem areas):			

This sample plot is located approximately 9 feet north of Flag 29B-5.

GETATION (Upominant species are checked)				03-20-14 Observations Equisetum telmateia 2%
Plant Species	% Cover	Stratum	Indicator	Trifolium repens 8%
1. crabgrass	trace	Herb	FACU	Plantago majora 2%
2. Juncus ensifolius	trace	Herb	FACW	Scirpus microcarpus 2%
3. moss	trace	Herb	NL	Holcus lanatus 2%
4 Poa sp.	trace	Herb	UNK	Juncus ensifolius 2%
Ranunculus repens	10	Herb	FACW	 various lawn grass 90% moss 2%
s various lawn grass	90	Herb	NL	111033 2 /0
7 velvetgrass	trace	Herb	FAC	_

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is not greater than 50 percent. Hydrophytic vegetation criterion is not satisfied. Vegetation meets wetland criterion based on best professional judgment due to lawn maintenance and other wetland criteria.

HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gage	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: none (in.) Depth to Free Water in Pit: none (in.) Depth to Saturated Soil: 6 (in.) Remarks (As relevant, describe recent precipitation, hydrological structure)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Saturation in the upper 12 inches satisfies wetland hydrology criterion.

							Data Plot	#: 29B	-SP1
							Wetland:	29B	
oject/Site	ELST Re-de	elineation			Date: 11/8	8/2007	F	Revisited 0	3-20-14
SOIL Soil Surve	ey Data:								
/lap Unit N	Name: Alderv	vood grav	elly sandy loa	m, 15 to 30 % slopes	Drai	nage Clas	ss: Moderate	ely well drai	ned
					Field	d Observa	tions Confirm	n Mapped T	Гуре?
axonomv	(Subgroup):	Entic Du	rochrepts		Yes		No X	NA	
-	scription:	2.1.0 2 0					<u> </u>		_
Depth Inches)	Horizon Designation	Matrix C (Munse		Mottle Color (Munsell Moist)	Mot Abu	tle ndance/C	ontrast	Texture, (Rhizosph	Concretions, eres, etc.
-9	A	10YR 2/1		none	none			loam	
-16	В	2.5Y 4/1		none	none			fill material	and loam
03-20-14 Observations - 0-6 Hydric Soil Indicators: 6-16			10YR 2/1 10YR 3/2 (85%)		none 10YR 6/4 10YR 5/8	none 12% 3%	loam gr. sa. loam w small cobbles		
	stosol					•	S LIST		
	stic Epipedon				Fe/Mn Cor		0 1 0 1		
	ulfidic Odor	- Maintur	- Decime				Sandy Soils		
	quic or Peragui educing Condit		e Regime		Other (Exp		hic Features)	
	leved or Low-C		olors				marks)		
	gh Organic Co								
			ces, local var	. ,	fies hydric so				

right opnytic vegetation Fresents	165		INU	 is this outing	sing i	01111 11	
Hydric Soils Present?	Yes	Х	No	 Yes	х	No	
Wetland Hydrology Present?	Yes	Х	No	 			_

Remarks

Maintained grasses meet hydrophytic vegetation criterion based on best professional judgment. Therefore all wetland criteria are met and this area is a wetland.

Data Plot #: 29B-SP2

Wetland:

Upland near 29B

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/8/200	17 F	Revisited 03-20-14	
Applicant/Owner: King County		County:	King C	County		
Investigator: Linda Krippner/Laura Brock		State:	WA			
□ 1987 Method	7 WA St. Method			Community ID:	Upland Shrub	
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID:	29B-SP2	
Is the site significantly disturbed (Atypical Situation))? Yes <u>X</u>	No				
Is the area a potential Problem Area?	Yes	No	Х			

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located approximately 3 feet northwest of Flag 29B-2.

VE	GE	CATION (✓ Dominant species are checked) Plant Species	% Cover	Stratum	Indicator	03-20-14 Observations Hypochaeris radicata 2%
	1.	Hypochaeris radicata spotted car's ear	trace	Herb	FACU	various lawn grasses 40% Ilex aquifolium 2%
~	2.	various lawn grasses	40	Herb	NL	arbor vitae 10%
	3.	holly	2	Shrub	NL	ornamental shrub (unknown) 50%
	4.	ornamental cedar	5	Shrub	NL	Rubus armeniacus 2%
~	5.	ornamental shrub - unknown	50	Shrub	NL	
	6.	Rubus armeniacus	5	Shrub	FACU	
(ex	cept l	of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing ogical adaptations to wetlands. "T" indicates trace.	0			

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.): *Area is landscaped. Vegetation does not meet wetland vegetation criterion.*

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available Field Observations:	Primary Indicators: Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: none (in.) Depth to Free Water in Pit: none (in.) Depth to Saturated Soil: none (in.) Remarks (As relevant, describe recent precipitation, hydrolo	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks) gic modifications, local variations, etc.):
No primary or secondary indicators of hydrology are present.	Netland hydrology criterion is not satisfied.

						Data Plot	#: <u>29B-SP2</u>	
						Wetland:	Upland near	29B
roject/Site	ELST Re-de	elineation		Date:	11/8/2007	F	Revisited 03-20-14]
SOIL Soil Surve Map Unit N		vood gravelly sandy loa	m. 15 to 30 % slope	S	Drainage Class	· Moderate	ly well drained	
				•	_		Mapped Type?	
	(Subgroup):	Entic Durochrepts				lo <u>X</u>	NA	
Profile De Depth (Inches)	scription: Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Co	ntrast	Texture, Concretic Rhizospheres, etc	
0-7	A	10YR 2/1	none		none		gravelly sandy loam	
7-16	A2	10YR 2/2	none		none		gravelly sandy loam	
Hi Hi Su Ac Re Gl Hi	educing Condit leyed or Low-C gh Organic Co		 ations, etc.):	Fe/M Orga Mott	ed on Hydric Soils In Concretions anic Streaking in S les (Redoximorph er (Explain in Rem	Sandy Soils ic Features))	
	ot meet hydric		. ,					
WETLA		MINATION						
Hydrophy	tic Vegetation	Present? Ye	es <u>No</u>	Х	Is this	s Sampling	Point Within a We	etland?
Hydric So	ils Present?	Ye	es <u>No</u>	Х		Yes	No X	
Wetland H	lydrology Pres	sent? Ye	es <u>No</u>	Х				

Remarks

None of the wetland criteria are met. Therefore, the sample plot is not located in a wetland.

Data Plot #: 29C-SP1 Wetland: 29C WETLAND DETERMINATION (Modified from: 1987 ACOE Wetlands Delineation Manual) Revisited 03-20-14 11/8/2007 Project/Site: ELST Re-delineation Date: Applicant/Owner: King County County: King County Investigator: Linda Krippner/Laura Brock WA State: 1987 Method ✓ 1997 WA St. Method Community ID: PFO Do Normal Circumstances exist on the site? Yes X No Field Plot ID: 29C-SP1 Is the site significantly disturbed (Atypical Situation)? Х No Yes Is the area a potential Problem Area? Х Yes No Remarks (Explain sample location, disturbances, problem areas): This sample plot is located approximately 7 feet west of the eastern boundary and 17 feet north of the southern boundary of Wetland 29C.

03-20-14 Observations **VEGETATION** (> Dominant species are checked) Equisetum hyemale 20% Plant Species % Cover Stratum Indicator Equisetum telmateia 45% 90 Herb FACW Equisetum telmateia 1. Hedera helix 35% Hedera helix 15 Shrub NL llex aquifolium 5% 2. Physocarpus capitatus 30% 30 FACW-Physocarpus capitatus Shrub 3. Rubus armeniacus 5% Rubus armeniacus 15 Shrub FACU 4. Rubus spectabilis 75% Rubus spectabilis 75 Shrub FAC+ 5. Salix lucida 15% FAC Populus balsamifera 80 Tree 6. Populus balsamifera 80% Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace. 100

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Therefore, the hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks): X Stream, Lake, or Tide Gage	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:10(in.)Depth to Saturated Soil:5(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *Soil saturation in the upper 12 inches satisfies wetland hydrology criterion.*

03-20-14 Observations - Soil saturated at surface. Free water in pit at 9 inches.

						Data Plot	#:	29C-SP1		
						Wetland:		29C		
Project/Site: ELST Re-delineatio	n			Date: 11/	8/2007	F	Revisite	ed 03-20-14		
SOIL										
Soil Survey Data:										
Map Unit Name: Kitsap Silt Loa	um 2 to 8% slope	s		Dra	inage Clas	ss: Moderate	ly well	drained		
	· · · · · · · · · · · · · · · · · · ·	-				ations Confirm				
Taxonomy (Subgroup): Dystric	Xerochrepts			Ye	s	No <u>X</u>	NA			
Profile Description:										
	Color ell Moist)	Mottle (Munse	Color ell Moist)	Mo [.] Abi	ttle undance/C	ontrast		ure, Concretions, ospheres, etc.		
0-12 A 10YR 2	1	none		none			peat			
12-16 B							sand	gravel		
Hydric Soil Indicators:	03-20-14 Obs	ervation	s - 0-12 12-16	10YR 2/ -	1 n		one -	peaty mineral (loam) sand gravel		
X Histosol				Listed on	Hydric Soi	ls List				
X Histic Epipedon				Fe/Mn Co						
Sulfidic Odor				Organic S	treaking in	Sandy Soils				
Aquic or Peraguic Moisture Regime					Mottles (Redoximorphic Features)					
Reducing Conditions				Other (Exp	olain in Re	marks)				
Gleyed or Low-Chroma										
High Organic Content in	Surface Layer									
Remarks (Describe soil disturba	nces, local varia	tions, etc	. .):							
The A horizon is composed of or	ganic matter. Lo	v chroma	a soil color	and high orga	anic contei	nt indicate hy	dric so	il.		
The A honzon is composed of or	-									
WETLAND DETERMINAT	ION									
		s X	No		Is th	is Sampling	Point	Within a Wetland?		

Remarks

Wetland Hydrology Present?

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Yes X No

No

Yes X No

			I	Data Plot #:	29C-SP2
			,	Wetland:	Upland near 29C
WETLA	AND DE	TERMINATIO	ON		
(Modified from: 1987	ACOE W	Vetlands De	lineation	Manual)	
Project/Site: ELST Re-delineation		Date: 11/8	3/2007	Revis	sited 03-20-14
Applicant/Owner: King County			ing County		
Investigator: Laura Brock/Linda Krippner			A		
1987 Method 1997 WA S	St. Method			nunity ID: U	pland Forest
Do Normal Circumstances exist on the site?	Yes X	No		Plot ID: 29C	
s the site significantly disturbed (Atypical Situation)?	Yes	No X		110(10. 230	-51 2
Is the area a potential Problem Area?	Yes	No X	_		
Remarks (Explain sample location, disturbances, probler			_		
SP-2 is located on a slope approximately 20' north of Flag	,	13-20-14 - SP is	located on f	ill slone annro	vimately 5 feet
, ,, ,, ,	v	west of fence ar	d 5 feet sout	hwest of gate.	North of bamboo.
	L			J	
				02 20 14 0	bservations
/EGETATION (> Dominant species are checked) Plant Species	% Co	over Stratum	Indicator		hyemale 2%
	trace		FACW		telmateia 75%
2. Equisetum nyemale 2. Equisetum telmateia	75	Herb	FACW	Hedera hel Bambusa v	ulgaris 30%
3 Bambusa vulgaris	15	Shrub	NL	Rubus arm	eniacus 2%
4. Rubus spectabilis	15	Shrub	FAC+		ctabilis 35%
5. Alnus rubra	30	Trace	FAC		phyllum 40% (rooted in WL) 20%
Percent of Dominant Species that are OBL, FACW, or		75			Isamifera (rooted in WL)
except FAC-). Include species noted (*) as showing norphological adaptations to wetlands. "T" indicates trace		75		Prunus lau	rocerasus 2%
Remarks (Describe disturbances, relevant local variation		al effects etc.):			
The percent of dominant species that are hydrophytic is g		. ,	drophytic ve	getation criteri	on is satisfied.
HYDROLOGY				_	
Recorded Data (Describe in Remarks):		Wetland Hydro		tors (Docorik	be in Remarks):
Stream, Lake, or Tide Gage		Primary Ind	•••		Je in Hemarks).
Aerial Photograph		· · · · · · · · · · · · · · · · · · ·	Inundated		
Other			_	in Upper 12 in	ches
X No Recorded Data Available			Water Ma		
Field Observations:			Drift Lines		
			Sediment		
			Duchase	Dattarna in Wa	
			Drainage	Patterns in We	etlands
Depth of Surface Water: none (in.)		Secondarv	_		
Depth of Surface Water: none (in.) Depth to Free Water in Pit: none (in.)		Secondary	Indicators (2 or more requ	ired):
		Secondary	Indicators (Oxidized F	2 or more requ	
Depth to Free Water in Pit: none (in.)		Secondary	Indicators (Oxidized F Water-Sta	2 or more requ Rhizospheres i	ired):
Depth to Free Water in Pit: none (in.)		Secondary	Indicators (Oxidized F Water-Sta Local Soil	2 or more requ Rhizospheres i ined Leaves	ired): n Upper 12 inches
Depth to Free Water in Pit: none (in.)	drologie m		Indicators (a Oxidized F Water-Sta Local Soil Other (Exp	2 or more requ Rhizospheres i ined Leaves Survey Data plain in Remar	ired): n Upper 12 inches

						Data Plot	t #:	29C-SP2
						Wetland:		Upland near 29C
							ely we m Ma NA Tex Rhi: grav	
roject/Site	: ELST Re-de	elineation		Date:	11/8/2007	[Revisi	ted 03-20-14
SOIL Soil Surve	ey Data:							
Map Unit N	Name: Alderw	vood gravelly sandy lo	am, 15 to 30 % slo	pes	Drainage Clas	s: Moderate	ely we	ll drained
					Field Observa	tions Confir	Upland near 29C Revisited 03-20-14 ely well drained n Mapped Type? NA Texture, Concretions, Rhizospheres, etc. gravel fill s) Point Within a Wetland	
Taxonomy	(Subgroup):	Entic Durochrepts			Yes	No <u>X</u>	NA	
Profile De	scription:							
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Co	ontrast	nd: Upland near 29 Revisited 03-20-14 rately well drained nfirm Mapped Type? (
0-16+							grav	el fill
Hi Hi Su Ac Re Gl Hi	educing Condit eyed or Low-C gh Organic Co			Fe/M Orga Mottl	d on Hydric Soil In Concretions Inic Streaking in les (Redoximorp r (Explain in Rei	Sandy Soils hic Features		
		No hydric soil indicato	,					
	ND DETERI						_	
	tic Vegetation	Present?	'es <u>X</u> No		Is th	is Sampling	g Poin	nt Within a Wetland?
Hydric So	ils Present?	Υ	es No	Х		Yes	١	No X
Wetland H	lydrology Pres	sent?	'es <u>N</u> o	Х				

Remarks

Hydric soil and hydrology criteria are not satisfied. Therefore, the sample plot is not in a wetland.

	Data Plot #: 29D-SP1
	Wetland: 29D
WETLAND D	ETERMINATION
(Modified from: 1987 ACOE	Wetlands Delineation Manual)
Project/Site: ELST Re-delineation	Date: 11/13/2007 Revisited 09-27-13
Applicant/Owner: King County	County: King
Investigator: Chip Maney, Erik Christensen	State: WA
□ 1987 Method	d Community ID: PEM
Do Normal Circumstances exist on the site? Yes	X No Field Plot ID: 29D-SP1
Is the site significantly disturbed (Atypical Situation)? Yes	No X
Is the area a potential Problem Area? Yes	No X
Remarks (Explain sample location, disturbances, problem areas)	

This sample plot is located between flags 2 and 3 at the toe of the slope. Populus balsamifera are directly upslope and a Arbutus menziesii leans out over the trail 30 feet to the north.

VE	VEGETATION (Dominant species are checked)										
		Plant Species	% Cover	Stratum	Indicator						
	1.	Arbutus mensiesii*	15		NL						
~	2.	Equisetum telmateia	70	Herb	FACW						
~	3.	Hedera helix	25	Herb	NL						
~	4.	Scirpus microcarpus	50	Herb	OBL						
~	5.	Corylus cornuta*	60	Shrub	FACU						
~	6.	Populus balsamifera*	50	Tree	FAC						
(exc		of Dominant Species that are OBL, FACW, or FAC FAC-). Include species noted (*) as showing ogical adaptations to wetlands. "T" indicates trace.	<u>100</u>								

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

*Corylus cornuta, Populus balsamifera, and Arbutus mensiesii were rooted outside of the wetland, but were hanging over to provide cover. Hydrophytic vegetation is dominate. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:9(in.)Depth to Saturated Soil:surface(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *Saturation in the upper 12 inches satisfies wetland hydrology criterion.*

09-27-13 Observations - Shallow inundation in ditch and active seeps.

							: <u>very poorly drai</u> ons Confirm Map o <u>X</u> NA	29D-SP1 29D
Project/Site	ELST Re-de	lineation		Date:	<u>11/13/2007</u>		Revis	sited 09-27-13
SOIL Soil Surve	ey Data:							
Map Unit N	Name: Shalca	ar Muck			Drainage Cl	ass: very poo	orly dr	ained
					Field Obser	vations Confir	m Ma	pped Type?
Гахопоту	(Subgroup):	Terric Medisaprists			Yes	No X	NA	·
Profile De	scription:	-					-	
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Mo		Mottle Abundance	/Contrast		xture, Concretions, izospheres, etc.
)-12	A	10YR 2/1	none		none		gra	velly loam
12-16	A2	10YR 3/1	none		none		loa	my sand
Hi Hi Su Ad Re X Gi Hi	educing Condit leyed or Low-C gh Organic Co	hroma Colors ntent in Surface Laye		Fe/N Orga Mottl	d on Hydric S In Concretions nic Streaking es (Redoximo r (Explain in F	s in Sandy Soil orphic Feature		
		disturbances, local va ndicate hydric soils	ariations, etc.):					
WETLA	ND DETERI	MINATION						
Hydrophy	tic Vegetation	Present?	Yes <u>x</u> No	o	ls	this Samplin	g Poi	nt Within a Wetland?
Hydric So	ils Present?		Yes X No	o		Yes >	(No
Wetland H	lydrology Pres	sent?	Yes <u>X</u> No	o c			<u> </u>	

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Data Plot #: 29D-SP2

Wetland:

Upland near 29D

WETLAND DETERMINATION

(Modified from: 1987 ACOE Wetlands Delineation Manual)

Project/Site: ELST Re-delineation		Date:	11/13/20	07 Revisited 09-27-13
Applicant/Owner: King County		County:	King	
Investigator: Chip Maney		State:	WA	
□ 1987 Method	A St. Method			Community ID: Upland Forest
Do Normal Circumstances exist on the site?	Yes X	No		Field Plot ID: 29D-SP2
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х	
Is the area a potential Problem Area?	Yes	No	Х	
Remarks (Explain sample location, disturbances, prob	lem areas):			

This sample plot is located directly upslope from sample plot 1 between flags 2 and 3.

VEGETATION (Dominant species are checked) Plant Species Indicator % Cover Stratum Equisetum telmateia 40 Herb FACW 1. Herb Hedera helix 90 NL 2. 50 FACU Corylus cornuta Shrub 3. Populus balsamifera 75 Tree FAC 4 4. Percent of Dominant Species that are OBL, FACW, or FAC 67

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Rema Stream, Lake, or Tide	,	Wetland Hydrology Indicators (Describe in Remarks): Primary Indicators:
Aerial Photograph Other X No Recorded Data Av Field Observations:	vailable	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth to Free Water in Pit: no Depth to Saturated Soil: no	one (in.) one (in.) one (in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe re	ecent precipitation, hydrologi	ic modifications, local variations, etc.):

No indicators of wetland hydrology are present. Wetland hydrology criterion is not satisfied.

						Data Plot #: Wetland:	#: <u>29D-SP</u>	2
						Wetland:	Upland	near 29D
Project/Site	: ELST Re-de	elineation		Date:	11/13/2007	F	Revisited 09-27-	-13
	ey Data:							
Map Unit N	lame: Shalca	ar Muck			Drainage Cla	ass: very poor	ly drained	
					Field Observ	ations Confirm	n Mapped Type	?
Taxonomy	(Subgroup):	Terric Medisaprists			Yes	No X	NA	
Profile De	scription:							
	Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Mois	st)	Mottle Abundance/0	Contrast		
0-18	А	10YR 2/2	none		none		gravelly sandy l	oam
Hi Hi Su Ac Re Gl Hi	stosol stic Epipedon Ilfidic Odor quic or Peragui educing Condit eyed or Low-C gh Organic Co	ions hroma Colors ntent in Surface Layer	- - - riations, etc.):	Fe/M Orga Mott	In Concretions inic Streaking in es (Redoximor	n Sandy Soils phic Features)	
	•		,	ot satisfied.				
Wetland: Upland near 29D Project/Site: ELST Re-delineation Date: 11/13/2007 Revisited 09-27-13 SOIL Soll Soll Survey Data: Date: 11/13/2007 Revisited 09-27-13 Map Unit Name: Shalcar Muck Drainage Class: very poorly drained Field Observations Confirm Mapped Type? Taxonomy (Subgroup): Terric Medisaprists Yes No X NA Profile Description: Designation Matrix Color Mottle Color Mottle Texture, Concretions, Rhizospheres, etc. 0-18 A 10YR 2/2 none none gravelly sandy loam Hydric Soil Indicators:								
					_		.	
	-	Present? Y			ls t	his Sampling	Point Within	a Wetland?
Hydric So	ils Present?	Y		Х		Yes	No X	
Wetland H	lydrology Pres	sent? Y	es No	X				

Remarks

Hydric soil and wetland hydrology criteria are not satisfied. Therefore, the sample plot is not located in a wetland.

				Da	ata Plot #:	29D-SP3
				W	etland:	29D
WETL	AND DET	ERMIN	ΑΤΙΟ	N		
(Modified from: 1987	ACOE W	etlands	Deli	neation M	lanual)	
Project/Site: ELST Re-delineation		Date:	11/13	3/2007	Revis	sited 09-27-13
Applicant/Owner: King County		County				
Investigator: Chip Maney, Erik Christensen		State:	WA	4		
□ 1987 Method	St. Method			Comm	unity ID: P	SS
Do Normal Circumstances exist on the site?	Yes X	No			lot ID: 29D	
Is the site significantly disturbed (Atypical Situation)?	Yes	No	х			
Is the area a potential Problem Area?	Yes	No	х			
Remarks (Explain sample location, disturbances, proble	em areas):	-		•		
This sample plot is located 20 feed downslope (south/sou	uthwest) of fla	ags 10 an	d 11, a	and 10 feet e	ast/northeas	t of an Alnus rubra with
rotted trunk.	,	J	- , .			
VEGETATION (> Dominant species are checked)						
Plant Species	% Cov	er Strati	um	Indicator		
1. Athyrium filix-femina	5	Herb		FAC		
2. Ribes lacustre	15	Shrub		FAC+		
3. Rubus armeniacus	15	Shrub		FACU		
Alnus rubra	<u>50</u> 50	Shrub Tree)	FAC+ FAC		
		1100		1710		
Percent of Dominant Species that are OBL, FACW, (except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trac	1	00				
Remarks (Describe disturbances, relevant local variation	ons, seasonal	effects, e	etc.):			
The percent of dominant species that are hydrophytic is			,	rophytic vege	etation criter	ion is satisfied.
HYDROLOGY			-			
	v	Votiond H	ludrol	ogy Indiante		ha in Domorka),
Recorded Data (Describe in Remarks):	v	Primar	-		Descri	be in Remarks):
Stream, Lake, or Tide Gage		i iiiiai	y mai			
Aerial Photograph		,	x	Inundated Saturated in	upper 12 ir	nches
Other			^	Water Mark		lenes
X No Recorded Data Available				Drift Lines	-	
Field Observations:				Sediment D	eposits	
				Drainage Pa	atterns in We	etlands
Depth of Surface Water: none (in.)		Secon	darv I	ndicators (2	or more real	uired):
Depth to Free Water in Pit: 10 (in.)		00001	ung 1			in Upper 12 inches
Depth to Saturated Soil: surface (in.)				Water-Stain		

Local Soil Survey Data Other (Explain in Remarks)

Remarks (As relevant, describe recent precipitation, hydrologic modifications, local variations, etc.): *Saturation in the upper 12 inches satisfies wetland hydrology criterion.*

								Dat	ta Plot	#:	29D-SP3
								We	etland:	Revisi n Map NA Text Rhiz - mucl	29D
roject/Site	Survey Data: Unit Name: Shalcar Muck nomy (Subgroup): Terric Medisaprists le Description: Matrix Color n Horizon Matrix Color Montel Moist) Designation Mottle Co A 10YR 2/1 none ic Soil Indicators: Histosol Histic Epipedon Sulfidic Odor Aquic or Peraguic Moisture Regime Reducing Conditions				Date:	11/13/200	7	Revi		risited 09-27-13	
OIL oil Surve	ey Data:										
/lap Unit N	Survey Data: Unit Name: <u>Shalcar Muck</u> nomy (Subgroup): <u>Terric Medisaprists</u> I e Description: h Horizon Matrix Color Mottle C nes) Designation (Munsell Moist) (Munsell						Drainage (Class: ve	ery poor	rly dra	ained
							Drainage Class: very poorly drained Field Observations Confirm Mapped Type? Yes No _X NA Mottle Texture, Concretions, Abundance/Contrast Rhizospheres, etc. none mucky loam on Hydric Soils List Concretions ic Streaking in Sandy Soils				
「axonomy	(Subgroup):	Terric Medisaprists	;				Yes	No	X	NA	
vrofile De	scription:										
Depth (Inches)									st		
)-18	А	10YR 2/1		none			none			muc	ky loam
Hi Hi Su Au Re X Gi Hi	stosol stic Epipedon ulfidic Odor quic or Peragui educing Condit leyed or Low-C gh Organic Co	ions chroma Colors ntent in Surface Lay		nns etc		Fe/M Orga Mottle	n Concretio	ns g in Sand Iorphic Fe	ly Soils eatures		
			variall	, eic	•						
	-										
WETLA	ND DETER	MINATION									
lydrophy	tic Vegetation	Present?	Yes	Х	No		l	s this Sa	mpling	g Poir	nt Within a Wetland
Hydric So	ils Present?		Yes	Х	No			Yes	s X	I	No
Wetland H	lydrology Pres	sent?	Yes	Х	No						

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

				Data	Data Plot #:		B-SP1	
				Wet	land:	30E	3	
WETI		FERMIN	ATION					
(Modified from: 198	7 ACOE W	/etlands	Deline	ation Ma	nual)			
Project/Site: ELST Re-delineation		Date:	1/11/200	08	Rev	visited 0	9-27-13	
Applicant/Owner: King County		County	: King					
Investigator: Matt Maynard, Erik Christensen		State:	WA					
□ 1987 Method	St. Method			Commur	ity ID:	PSS	09-27-13 - F	PFO
Do Normal Circumstances exist on the site?	Yes X	No		Field Plo	-	B-SP1		
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Х					
Is the area a potential Problem Area?	Yes	No	Х					
Remarks (Explain sample location, disturbances, probl	em areas):							
This sample plot is located 12 feet northwest of the boar	dwalk and n	orth of the	large woo	ody debris.				
								-
VEGETATION (> Dominant species are checked)				1	9-27-13			
Plant Species	% Co	over Strat	um Ind		Athyrium Phalaris a			
1. Athyrium filix-femina	5	Herb	FA	· - ·	Solanum			
✓ 2. Equisetum telmateia	25	Herb	FA		Cornus se			
3. Oenanthe sarmentosa	5	Herb	OE	BL F	Rubus arr	meniacu	is trace	

Alnus rubra 70%

Physocarpus capitatus 55%

Rubus spectabilis 10%

Lonicera involucrata 15%

FACW

FAC+

FACW

FACU

FAC

Percent of Dominant Species that are OBL, FACW, or FAC (except FAC-). Include species noted (*) as showing 100 morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

70

40

15

15

35

trace

Herb

Herb

Shrub

Shrub

Shrub

Tree

HYDROLOGY

5.

6.

7.

8.

6 4.

V 9. Phalaris arundinacea

Solanum dulcamara

Rubus armeniacus

Cornus sericea

Salix spp.

Alnus rubra

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage Aerial Photograph Other X No Recorded Data Available Field Observations:	Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:15(in.)Depth to Saturated Soil:surface(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydrologic Saturation in the upper 12 inches satisfies wetland hydrology criteria	

09-27-13 Observations - Soil saturation to the surface. Drainage channel with flowing water (flowing north) near sample plot.

						Data Plot # Wetland:	30B-SP1
Project/Site	e: ELST Re-de	elineation		Date:	1/11/2008	R	evisited 09-27-13
SOIL Soil Surv	ey Data:						
Map Unit	Name: Alderv	vood gravelly sandy lo	am 15 to 30% slopes		Drainage Class	Moderatel	y well drained
					Field Observation	ons Confirm	Mapped Type?
Taxonomy	/ (Subgroup):	Dystic Durochrepts			Yes No	<u>x</u>	NA
Profile De Depth (Inches)	escription: Horizon Designation	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)		Mottle Abundance/Cor	ıtrast	Texture, Concretions, Rhizospheres, etc.
0-5	A1	10YR 2/1	none		none		silt loam
5-10	A2	10YR 3/1	none		none		sandy gravelly loam
10-17	A2	7.5YR 2.5	none		none		muck
н н s	bil Indicators: istosol istic Epipedon ulfidic Odor quic or Peragui educing Condit leved or Low-C			Fe/M Orga Mottl	d on Hydric Soils In Concretions nic Streaking in S es (Redoximorphi r (Explain in Rema	andy Soils c Features)	
		firoma Colors					
X G		ntent in Surface Layer	r				

 Hydrophytic Vegetation Present?
 Yes
 X
 No
 Is this Sampling Point Within a wetla

 Hydric Soils Present?
 Yes
 X
 No
 Yes
 X
 No

 Wetland Hydrology Present?
 Yes
 X
 No
 Yes
 X
 No

Remarks

Wetland vegetation, hydrology, and soil criteria are met. Therefore, the sample plot is located in a wetland.

Wetland: Upland near 30B WETLAND DETERMINATION (Modified from: 1987 ACOE Wetlands Delineation Manual) Revisited 09-27-13 Project/Site: ELST Re-delineation 1/11/2008 Date: Applicant/Owner: King County County: King Investigator: Matt Maynard, Erik Christensen State: WA Community ID: Upland Shrubs 09-27-13 - Forest 1987 Method ✓ 1997 WA St. Method Do Normal Circumstances exist on the site? Yes X No Field Plot ID: 30B-SP2 Is the site significantly disturbed (Atypical Situation)? No Х Yes Is the area a potential Problem Area? Yes No Х

Data Plot #:

30B-SP2

Remarks (Explain sample location, disturbances, problem areas):

This sample plot is located 6 feet north of flag W30B-14.

VEGE	TATION (> Dominant species are checked)				09-27-13 Observations
	Plant Species	% Cover	Stratum	Indicator	Equisetum telmateia 10% Polystichum munitum 5%
1.	Equisetum telmateia	10	Herb	FACW	Rubus armeniacus 50%
2.	Polystichum munitum	5	Herb	FACU	Rubus spectabilis 60%
3.	Rubus armeniacus	10	Shrub	FACU	Rubus ursinus 5%
4.	Rubus spectabilis	60	Shrub	FAC+	 Acer macrophyllum 70% Fraxnius latifolia 5%
5.	Rubus ursinus	5	Shrub	FACU	
6.	Acer macrophyllum	10	Tree	FACU	_

100

(except FAC-). Include species noted (*) as showing morphological adaptations to wetlands. "T" indicates trace.

Remarks (Describe disturbances, relevant local variations, seasonal effects, etc.):

The percent of dominant species that are hydrophytic is greater than 50 percent. Hydrophytic vegetation criterion is satisfied.

HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators (Describe in Remarks):
Stream, Lake, or Tide Gage	Primary Indicators:
Aerial Photograph Other X No Recorded Data Available Field Observations:	Inundated Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits
	Drainage Patterns in Wetlands
Depth of Surface Water:none(in.)Depth to Free Water in Pit:none(in.)Depth to Saturated Soil:none(in.)	Secondary Indicators (2 or more required): Oxidized Rhizospheres in Upper 12 inches Water-Stained Leaves Local Soil Survey Data Other (Explain in Remarks)
Remarks (As relevant, describe recent precipitation, hydro	c
No indicators of wetland hydrology are present. Wetland hyd	וטוטעץ טוופווטוו וז ווטן זמנוזובע.

							Dat	a Plot #:	30B-SP2
							Wet	tland:	Upland near 30B
-i					Deter	1/11/0000		Re	visited 09-27-13
	ELST Re-de	elineation			Date:	1/11/2008			Visited 05-27-15
SOIL Soil Surve	ey Data:								
Map Unit I	Name: Alderv	vood gravelly sandy	loam, 15 to 30	% slopes		Drainage Cl	ass: Mo	derately	well drained
						Field Observ	vations (Confirm I	Mapped Type?
Taxonomy	(Subgroup):	Dystic Durochrepts	3			Yes	No	<u>x</u>	NA
Profile De	scription:								
Depth (Inches)	Horizon Designation	Matrix Color (Munsell Moist)	Mottle C (Munsell			Mottle Abundance/	Contras		Fexture, Concretions, Rhizospheres, etc.
0-16	А	7.5YR 2.5/2	none			none		ç	gravelly sandy loam
Hi Hi Su Ac Re Gl Hi	educing Condit leyed or Low-C gh Organic Co		variations, etc.)		Fe/M Orgat Mottle Othe	d on Hydric So n Concretions nic Streaking es (Redoximo r (Explain in R	in Sandy rphic Fe	atures)	
				1	find				
No indicat	ors of hydric so	oil are present. Hydr	ic soil criterion	is not satis	illeu.				
		, ,	ic soil criterion	IS NOT SATIS	ineu.				
WETLA		MINATION			ineu.	ls ¹	this Sar	nplina P	Point Within a Wetland?
WETLA Hydrophy		MINATION	ic soil criterion Yes <u>X</u> Yes	No	<u></u>	ls†	this Sa r Yes		Point Within a Wetland? No X

Remarks

Wetland vegetation, hydrology, and soil criteria are not met. Therefore, the sample plot is not located in a wetland.

APPENDIX B

Wetland Rating Forms

	Version 2 – Updated .	July 2006 to inc	RM – WESTERN WASHI rease accuracy and reproducibility w WDFW definitions for priority h	among users		
Name of w	etland (if known): 15A		Date	of site visit: <u>0</u>	5-05-09 (rev: (03-11-14)
Rated by:	Colin Worsley / Matt Maynard	Trained by	Ecology? Yes <u>X</u> No	Date of trainir	ng: <u>11- 2005</u>	/ 04-2006
SEC:	07 TOWNSHIP: 24N	RANGE	: <u>06E</u> Is S/T/R in Aj	ppendix D? Ye	es N	lo <u>X</u>
	Map of wetland unit:	Figure	Estimated size_	~0.50 acre	_	
		SUMMA	RY OF RATING			
Category I	based on FUNCTIONS provided l			III X	X IV	
		- j				
	Category I = $Score > 70$		Score for Water Quality Fun	nctions	18	_
	Category II = Score 51 - 69		Score for Hydrologic Fu	nctions	8	
	Category III = Score 30 – 50		Score for Habitat Fu	nctions	16	
	Category IV = Score < 30		TOTAL Score for Fu	nctions	42	
Category b	oased on SPECIAL CHARACTERI	ISTCS of Wet	land I II	Does	not apply <u>X</u>	
	Final Cates	20rv (choose	e the "highest" category from	above")	III	7
			about the wetland unit.			
	Wetland Unit has Specia		Wetland HGM Class			
	Characteristics		used for Rating			
	Estuarine	_	Depressional			
	Natural Heritage Wetland	d	Riverine			
	Bog		Lake-fringe	X		
	Mature Forest		Slope	(x)		
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	Х	Check if unit has multiple HGM classes present	Х		
	vetland being rated meet any of the tote the wetland according to the re					ou will
	Check List for Wetlands (in addition to the protect				YES	NO
Enda For t	the wetland unit been documented angered animal or plant species (T the purposes of this rating system, ' or federal database.	as a habitat f 7/E species)?	for any Federally listed Threa			Х
	the wetland unit been documented angered animal species? For the p					

 are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 Image: Category 1 Natural Heritage Wetlands (see p. 19 of data form).

 SP3.
 Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 X

 SP4.
 Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.
 X

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 8

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by NO – go to 2 YES – the wetland class is Ti	dal Fringe
	If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		<i>e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it</i> uarine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain cons	sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	nd II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	vational alogs is Flota
	NO – go to 3 YES – The v If your wetland can be classified as a "Flats" wetland,	wetland class is Flats use the form for Depressional wetlands
3.	Does the entire wetland meet both of the following criteria	
5.		res of a body of permanent open water (without any vegetation
	on the surface) where at least 20 acres (8ha) i	
	At least 30% of the open water area is deeper the	
		wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	1
	The wetland is on a slope (<i>slope can be very</i> , The water flows through the wetland in one d	irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
-		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	re it gets inundated by overbank flooding from that stream or
	river.	te it gets mundated by overbank hooding from that stream of
	The overbank flooding occurs at least once ev	
		sions that are filled with water when the river is not flooding
		wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which the year. This means that any outlet, if present is higher the	hich water ponds, or is saturated to the surface, at some time of
	$\frac{1}{NO - go to 7}$ YES – Th	
7		vious depression and no overbank flooding. The unit does not
7.	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet.	
	<mark>No – go to 8</mark> YES – Th	e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represent	sents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe Depressional
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
	freshwater wetland	characteristics
		apply to your wetland, or you have more than 2 HGM classes
wit	hin a wetland boundary, classify the wetland as Depression	al for the rating.

Wetland Rating Form - Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

L	Lake-fringe Wetlands	Points
T 1	WATER QUALITY FUNCTIONS – Indicators that the wetland unit functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland unit have the <u>potential</u> to improve water quality? (see p.59)	per box)
	 L 1.1 Average width of vegetation along the lakeshore (use polygons of Cowardin classes): Vegetation is more than 33 ft. (10m) wide points = 6 	Figure
	• Vegetation is more than 16 ft.(5m) wide and < 33 ft points = 3	
	• Vegetation is more than 6 ft. $(2m)$ wide and < 16 ft points = 1	6
	 Vegetation is hore than 6 ft. wide	
	L 1.2 Characteristics of the vegetation in the wetland: <i>Choose the appropriate description that results in the highest</i>	Figure
	points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the	Figure
	dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.	
	• Cover of herbaceous plants is $> 90\%$ of the vegetated area	
	• Cover of herbaceous plants is $> 2/3$ of the vegetated area	3
	 Cover of herbaceous plants is > 1/3 of the vegetated area	
	• Other vegetation that is not aquatic bed in $> 1/3$ vegetated area points = 1	
	• Aquatic bed cover and open water $> 2/3$ of the unit	
	Map with polygons of different vegetation types Add the points in the boxes above	
		9
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 polluted surface water flowing through the unit to the lake. <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Wetland is along the shores of a lake or reservoir that does not meet water quality standards	
	Grazing in the wetland or within 150 ft	
	Polluted water discharges to wetland along upland edge Tilled fields or orchards within 150 ft. of wetland	
	X Residential or urban areas are within 150 ft. of wetland	Multiplior
	Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore)	Multiplier
	\underline{X} Power boats with gasoline or diesel engines use the lake Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from L1 by L2; then <i>add score to table on p. 1</i>	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	1
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.62)
	L 3 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>):	Figure
	 (choose the highest scoring description that matches conditions in the wetland) 3/4 of distance is shrubs or forest at least 33 ft. (10m) wide points = 6 	- igui e
	• 3/4 of distance is shrubs or forest at least 6 ft. (2m) wide	
	• 1/4 of distance is shrubs or forest at least 33 ft. (10m) wide	4
	 Vegetation is at least 6 ft. (2m) wide (any type except aquatic bed) points = 2 Vegetation is less than 6 ft. (2m) wide (any type except aquatic bed) points = 0 	
	Aerial photo or map with Cowardin vegetation classes	
	Record the points in the boxes above	4
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 64)
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following	
	conditions apply.	
	\underline{X} 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,	Multiplier
	other wetlands) that can be damaged by shoreline erosion.	V2
	Other YES multiplier is 2 NO multiplier is 1	<u>X2</u>
	TOTAL – Hydrologic Functions Multiply the score from L3 by L4; then <i>add score to table on p. 1</i>	8
•	A CALLE Aly and solve to another the second from L5 by L+, then and scole to have on p. 1	0

Comments: Majority of herbaceous vegetation is maintained lawn.

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	 H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants 	Figure
	Scrub/shrub (areas where shrubs have > 30% cover) \overline{X} Forested (areas where trees have > 30% cover) If the unit has a forested class check if: \overline{X} The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground- cover) that each cover 20% within the forested polygon.	2
	Add the number of vegetation types that qualify. If you have:Map of Cowardin vegetation classes4 structures or more points = 43 structures points = 22 structures points = 11 structure 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 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated Occasionally flooded or inundated 3 or more types presentpoints = 2 2 types presentpoints = 1 1 type presentpoints = 0	Figure
	Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland X Lake-fringe wetland	
	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: > 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 Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points Low = 1 point Low = 1 point Low = 1 point Low = 1 point	Figure
	None = 0 points Low = 1 point Moderate = 2 points Use map of Cowardin classes High = 3 points [riparian braided channels]	. 2
	High = 5 points 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.	0
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	7

Wetland name or number 15A

2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 so per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points = 4 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 5 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = 5 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = 5 Som (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. No paved areas (except paved trails) or buildi	Figure _
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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a 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) H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? 	at 2

• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on</i>	b. 1 16
TOTAL for H 1 from pag	re 8 7
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H	2.4 9
There are no wetlands within 1/2 milepoints	
There is at least 1 wetland within 1/2 milepoints	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints	= 3
disturbedpoints	<mark>= 3</mark>
 wetlands within 1/2 milepoints There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	= 5
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	_ 5
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints	= 5
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p	. 84)
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points	
end, and $> 6 \text{ m} (20 \text{ ft}) \text{ long}.$	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the large	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteris	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basa	t.
rock, ice, or other geological formations and is large enough to contain a human.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soil	5,
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearsho	re,
provide functional life history requirements for instream fish and wildlife resources.	
a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). <u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	3
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
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.	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; cro	wn
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i>	
<u>http://wdfw.wa.gov/hab/phslist.htm</u>) Which of the following priority hebitate are within 220 ft (100m) of the wetland writ?	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.	
C1	Estuarine wetlands? (see p.86)	
~	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II	Cat. 1
	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 <i>Spartina</i> spp, are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. I
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Ratin
	or un-mowed grassland The wetland has at least 2 of the following features, tidal channels, depressions with open water	I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	. –
r r	Natural Heritage Wetlands (see p. 87)	
22	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat 1
	YES = Category 1 NO not a Heritage Wetland	Cut
2	Bogs (see p. 87)	
23	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO = go$ to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat.]

	and name of number <u>13A</u>					
SC4	Forested Wetlands (see p. 90)					
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland. The wetlend is larger than $1/10$ core (4250 course ft.)	Cat. I				
		C (H				
		Cat. II				
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	Long Beach Peninsula lands west of SR 103					
	• Grayland-Westport lands west of SR 105					
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

Wetland name or number 15BC

WETLAND RA Version 2 – Updated . Updated Oct. 2	July 2006 to incr	ease accuracy		lity among users		
Name of wetland (if known): 15BC				Date of site	visit: 03-1	1-14
Rated by: Colin Worsley / Matt Maynard Tra	ained by Ecolo	ogy? Yes _	<u>X</u> No	Date of trainin	g: <u>11-2005 / 0</u>)4-2006
SEC: 07 TOWNSHIP: 24N	RANGE:	06E	Is S/T/R in	Appendix D? Ye	es N	No <u>X</u> _
Map of wetland unit:	Figure		Estimated si	ze ~0.15 acre	_	
	SUMMAI	RY OF RA	TINC			
Category based on FUNCTIONS provided		-		III	IV	X
Category I = Score > 70		Score for	Water Quality 1	Functions	4	
Category II = Score $51 - 69$			· ·		10	_
Category III = Score $30 - 50$		Score for Hydrologic Functions Score for Habitat Functions			13	_
Category IV = Score < 30		101	TAL Score for 1	Functions	27	
Category based on SPECIAL CHARACTERI	Category based on SPECIAL CHARACTERISTICS of Wetland I II Does a					X
Final Categ Summary of basic		C	0.	om above")	IV]
Wetland Unit has Specia Characteristics	al		nd HGM Clas d for Rating	s		
Estuarine		Depressio		X		
Natural Heritage Wetland	1	Riverine	1141	(X)		
Bog		Lake-frin	ge			
Mature Forest		Slope	<u> </u>	(x)		
Old Growth Forest		Flats				
Coastal Lagoon		Freshwat	er Tidal			
Interdunal						
None of the above	Х		nit has multipl ses present	e X		
Does the wetland being rated meet any of the need to protect the wetland according to the re- Check List for Wetlands	egulations rega	arding the s	pecial characte			ou will

	(in addition to the protection recommended for its category)	
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

If the hydrologic criteria listed in each question do not apply t multiple HGM classes. In this case, identify which hydrologic				
1. Are the water levels in the entire unit usually controlled b				
NO - go to 2 $YES - the wetland class is T$				
If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)			
	e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it			
	uarine in the first and second editions of the rating system are called Salt			
	Estuarine wetlands were categorized separately in the earlier editions, and			
	sistency between editions, the term "Estuarine" wetland is kept. Please			
note, however, that the characteristics that define Category I a				
	arce (>90%) of water to it. Groundwater and surface water			
runoff are NOT sources of water to the unit. NO - go to 3 $YES - The$	watland along is Flat s			
100 - go to 5 $1ES - 1heIf your wetland can be classified as a "Flats" wetland$	wetland class is Flats use the form for Depressional wetlands			
3. Does the entire wetland meet both of the following criteri				
	nores of a body of permanent open water (without any			
vegetation on the surface) where at least 20 a				
At least 30% of the open water area is deepe				
	wetland class is Lake-fringe (Lacustrine Fringe)			
4. Does the entire wetland meet all of the following criteria?				
The wetland is on a slope (slope can be very				
	lirection (unidirectional) and usually comes from seeps. It may			
flow subsurface, as sheetflow, or in a swale				
The water leaves the wetland without being				
	e types of wetlands except occasionally in very small and eppendences of wetlands except occasionally in very small and experiences of the eppendence of the except of the			
	wetland class is Slope			
5. Does the entire wetland meet all of the following criteria?				
The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or				
river.				
The overbank flooding occurs at least once e				
	sions that are filled with water when the river is not flooding			
	wetland class is Riverine			
	hich water ponds, or is saturated to the surface, at some time of			
the year. This means that any outlet, if present is higher t NO - go to 7 $YES - The second seco$	e wetland class is Depressional			
	vious depression and no overbank flooding. The unit does not			
pond surface water more than a few inches. The unit seen				
wetland may be ditched, but has no obvious natural outlet				
	e wetland class is Depressional			
	ntains several different HGM classes. For example, seeps at the base of a			
	n a depressional wetland has a zone of flooding along its sides. GO			
	GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT			
	Use the following table to identify the appropriate class to use for the			
	r wetland. NOTE: Use this table only if the class that is recommended in			
	wetland unit being rated. If the area of the class listed in column 2 is less			
than 10% of the unit, classify the wetland using the class that repre-				
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating			
Slope + Riverine	Riverine			
Slope + Depressional Slope + Lake-fringe	Depressional Lake-fringe			
Depressional + Riverine along stream within boundary	Depressional			
Depressional + Lake-fringe	Depressional			
Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special			
freshwater wetland	characteristics			
If you are unable still to determine which of the above criteria				
within a wetland boundary, classify the wetland as Depression	al fan tha nating			

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Points
that wetland functions to improve water quality.	(only 1 score
	per box)
ve water quality? ut of the wetland:	(see p.38
vater leaving it (no outlet)	Figure
R highly constricted, permanently flowing outlet points = 2	
constricted, surface outlet (<i>permanently flowing</i>) points = 1 y), or in the Flats class, with permanent surface	1
let and/or outlet is a man-made ditch points = 1	
reat unit as "intermittently flowing") Provide photo or drawing	
ff layer) is clay or organic (use NRCS definitions)	0
(emergent, shrub, and/or forest Cowardin class):	
etation > = 95% of area points = 5	Figure
etation > = 1/2 of area points = 3	1
$\begin{array}{l} \text{etation} > = 1/10 \text{ of area} \\ \text{etation} < 1/10 \text{ of area} \\ \end{array} \begin{array}{l} \text{points} = 1 \\ \text{points} = 0 \end{array}$	1
Map of Cowardin vegetation classes	
nundation: This is the area of the wetland that is ponded for at	Figure
during the year. Do not count the area that is permanently condition 5 out of 10 years.	riguite
area of wetland points = 4	
area of wetlandpoints = 2 area of wetlandpoints = 0	0
Map of Hydroperiods	
Add the points in the boxes above	2
prove water quality?	(see p. 4-
ere are pollutants in groundwater or surface water coming into	(see p. 1
e water quality in streams, lakes or groundwater downgradient	
llowing conditions provide the sources of pollutants. A unit al sources, but any single source would qualify as opportunity.	
150 ft	
to wetland	
50 ft. of wetland to wetland that drains developed areas, residential areas, farmed	
io wettand that drams developed areas, residential areas, farmed	
rses are within 150 ft. of wetland	Multiplie
gh in phosphorus or nitrogen	X2
NO multiplier is 1	<u></u>
fultiply the score from D1 by D2; then <i>add score to table on p. 1</i>	4
etland unit functions to reduce flooding and stream degradation.	
e flooding and erosion?	(see p.40
but of the wetland unit	(*** 1
water leaving it (no outlet) points = 4	
R highly constricted permanently flowing outlet points = 2	2
y) or in the Flats class, with permanent surface let and/or outlet is a man-made ditchpoints = 1	2
reat unit as "intermittently flowing")	
constricted, surface outlet (<i>permanently flowing</i>) points = 0	
stimate the height of ponding above the bottom of the outlet. For f permanent water or deepest part (if dry).	
pove the surface or bottom of the outlet points = 7	
$\hat{points} = 5$	0
3 ft. from surface or bottom of outlet points = 5	0
m surface or bottom of outlet points = 3 y)but has small depressions on the surface that trap water points = 1	
points = 0	
in the watershed: Estimate the ratio of the area of upstream	
wetland to the area of the wetland unit itself. imes the area of unit points = 5	
es the area of the unit	3
0 times the area of the unit points = 0	
	0 times the area of the unit points = 0 points = 5 Add the points in the boxes above

Wetland name or number 15BC

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

Thes	e questions apply to wetlands of all HGM classes.	Points (only 1 score			
	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 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover)	Figure			
	If the unit has a forested class check if:XThe forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have:4 structures or more points = 42 structures points = 11 structure points = 0	2			
	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	Figure			
	cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 1 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 0 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 2 points	1			
	Freshwater tidal wetland = 2 points Map of hydroperiods				
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1			
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is	Figure			
	None = 0 points Low = 1 point Moderate = 2 points always "high". Image: White the point of	. 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 point, you put into the next column.	0			
1	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	5			

Wetland name or number 15BC

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 scor per box)
	H 2.1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 5 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference	Figure
	 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 1 mile of a lake greater than 20 acres? 	1

 H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). 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. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wild	3
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
end, and > 6 m (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
 H 2.4 <u>Wetland Landscape</u>: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, 	
 but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe 	
• The wetland is Lake-inige on a lake with fittle disturbance and there are 5 other lake-inige wetlands within 1/2 milepoints = 5	2
• There are at least 3 other wetlands within $1/2$ mile, BUT the connections between them are	3
 disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands 	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	5
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	13
Commonts:	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met.	
C1	Estuarine wetlands? (see p.86)	
UI	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and With a salinity greater than 0.5 ppt.	
	$\mathbf{YES} = Go \text{ to } SC 1.1 \qquad \mathbf{NO} X$	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated und 332-30-151?YES = Category INO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II	Cat. I
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazin less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp, are only that cover more than 10% of the wetland, then the wetland should be given a dual rating The area of Spartina would be rated a Category II while the relatively undisturbed upper	g, and has y species (I/II). Cat. I
	with native species would be a Category 1. Do not, however, exclude the area of Spartin determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or u	na in Dual
	or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with ope or contiguous freshwater wetlands.	T /TT
C2	Natural Heritage Wetlands (see p. 87)	
-	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/I	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered Sensitive plant species.	l, or
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetlan	d? (This
	question is used to screen out most sites before you need to contact WNHP/DNR.)	u : (1115
	S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		X
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state the	
	or endangered plant species?	Cat I
	YES = Category 1 NO not a Heritage Wetland	
~ •		
C3	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bo	are? Ure
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate a</i>	
	wetland based on its function.	ne
	 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a fi 	
	identify organic soils)? YES = go to question 3 NO = go to question 2	cia key to
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches dee	p over
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a	lake or
	pond? YES = go to question 3 NO = is not a bog for purpose	of rating
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if p	present,
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	(more
	YES = Is a bog for purpose of rating $NO =$ go to question 4NOTE: If you are uncertain about the extent of mosses in the understory you may substituvituring her measuring the plus of the meter that example a help days of least 16" days of the set of the se	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If	the pH is
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	orn
	 less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, west 	
	 less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, west hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WIT 	TH any of
	 less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, west 	TH any of

SC4	Forested Wetlands (see p. 90)						
~	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland</i>						
	 based on its function. Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). 						
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees						
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW						
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.						
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old						
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than						
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally						
	less than that found in old-growth.	Cat. I					
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics						
SC5	Wetlands in Coastal Lagoons (see p. 91)						
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated						
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.						
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5						
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the						
	bottom.)						
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon						
	SC 5.1 Does the wetland meet all of the following three conditions?						
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has						
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).						
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed						
	or un-mowed grassland.	Cat. I					
	The wetland is larger than 1/10 acre (4350 square ft.)	~					
	YES = Category I NO = Category II	Cat. II					
SC6	Interdunal Wetlands (see p. 93)						
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or						
	WBUO)?						
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating						
	If you answer yes you will still need to rate the wetland based on its functions.						
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103						
	 Grayland-Westport lands west of SR 105 						
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 						
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?						
	$\mathbf{YES} = \text{Category II} \qquad \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?						
	YES = Category III	Cat. III					
	Category of wetland based on Special Characteristics						
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.						
	If you answered NO for all types enter "Not Applicable" on p. 1	NA					

Wetland name or number 15D

	Version 2 – Update	d July 2006 to in	DRM – WESTERN WASHI ncrease accuracy and reproducibility new WDFW definitions for priority h	among users		
Name of w	vetland (if known): 15D		Date	e of site visit:	01-30-09 & (09-12-13
Rated by:	Colin Worsley / Matt Maynard	Trained by Ec	cology? Yes X No	Date of traini	ing: <u>11-2005 /</u>	04-2006
SEC: 07	TOWNSHIP: 24N	RANG	E: <u>06E</u> Is S/T/R in A _I	opendix D? Y	es N	No <u>X</u>
	Map of wetland unit	t: Figure	Estimated size_	0.05 acre	_	
		SUMM	ARY OF RATING			
Category	based on FUNCTIONS provided	d by wetland:	: I II	III	IV	X
	Category I = Score > 70	7	Score for Water Quality Fu	nctions	8	
	Category II = Score 51 - 69		Score for Hydrologic Fu	nctions	10	
	Category III = Score $30 - 50$		Score for Habitat Fu		11	_
	Category IV = Score < 30		TOTAL Score for Fu	nctions	29	
Category I	based on SPECIAL CHARACTE	 RISTCS of W	etland I II	Does	s not apply	X
	Final Cate	egory (choo	ose the "highest" category from	above")	IV	
	Summary of basi	ic informatio	n about the wetland unit.			
	Wetland Unit has Spe Characteristics	cial	Wetland HGM Class used for Rating			
	Estuarine		Depressional	X		
	Natural Heritage Wetla	nd	Riverine			
	Bog		Lake-fringe			
	Mature Forest		Slope			
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	Х	Check if unit has multiple HGM classes present			
	wetland being rated meet any of otect the wetland according to the					ou will
	Check List for Wetlan	ds that Need	a Additional Protection mended for its category)		YES	NO
<i>End</i> For	the wetland unit been documente langered animal or plant species the purposes of this rating system e or federal database.	d as a habitat (T/E species)?	t for any Federally listed Threa.			Х

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the Х

Х

Х

SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	/ tides (i.e. except during floods)?
	NO - go to 2 $YES - the wetland class is Ti$	
	If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and
		sistency between editions, the term "Estuarine" wetland is kept. Please
2	note, however, that the characteristics that define Category I a	
2.	The entire wetland unit is flat and precipitation is only sou runoff are NOT sources of water to the unit.	rce (>90%) of water to it. Groundwater and surface water
		wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	?
		ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper NO – go to 4 YES – The	wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	wettand class is Lake-It lige (Lacusti lie Fringe)
4.	The wetland lise on a slope (slope can be very)	gradual).
		lirection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale v	
	The water leaves the wetland without being	
		types of wetlands except occasionally in very small and pressions are usually <3 ft diameter and less than 1 foot deep).
		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	······································
		re it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once ev	very two years. sions that are filled with water when the river is not flooding.
		wetland class is Riverine
6.		hich water ponds, or is saturated to the surface, at some time of
0.	the year. This means that any outlet, if present is higher th	
	NO – go to 7 YES – Th	e wetland class is Depressional
7.		vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet.	
0		e wetland class is Depressional
8.	slope may grade into a riverine floodplain, or a small stream within	ntains several different HGM classes. For example, seeps at the base of a
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
	AREAS IN THE UNIT (make a rough sketch to help you decide).	Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
	1	wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repres	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine Slope + Depressional	Riverine Depressional
	Slope + 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	Treat as ESTUARINE under wetlands with special
If	freshwater wetland	characteristics apply to your wetland, or you have more than 2 HGM classes
шy	ou are unable sum to determine which of the above criteria	appry to your wettand, or you have more than 2 now classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 sco per box)
) 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
<u>, 1</u>	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	
	YESpoints = 4NOpoints = 0D 1.3Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	
	 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	0
	• wetland has persistent, ungrazed vegetation < 1/10 of area	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	 ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	 Area seasonally ponded is > 1/2 total area of wetland	2
	• Area seasonally ponded is < 1/4 total area of wetland points = 0	2
	Map of Hydroperiods	
	Total for D 1Add the points in the boxes above	
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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	M-141-11-
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Multiplie
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	
-		8
•	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	8
• D 3		1
• D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	1
• D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)points = 4 	1
• D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	(see p.46
• D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	1
• D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	(see p.46
	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	(see p.46
• D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	(see p.46
• D 3	 Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit is a intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	(see p.46
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D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	(see p.46
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D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 5 • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	(see p.46
	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	(see p.46
D 3	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	(see p.46 2 0
	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	(see p.46
	Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	(see p.46

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

Thes	se questions apply to wetlands of all HGM classes.	Points (only 1 score
	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) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover)	Figure
	Forested (areas where shuds have > 30% cover) <i>If the unit has a forested class check if:</i> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground- cover) that each cover 20% within the forested polygon.	
	Add the number of vegetation types that qualify. If you have:Map of Cowardin vegetation classes4 structures or more points = 43 structures points = 22 structures points = 11 structure 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 1/4 acre to count (see text for descriptions of hydroperiods). X Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure 2
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	F :
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	0
	Use map of Cowardin classes Use map of Cowardin classes	
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long)	5
	 Large, downed, woody debris within the wetland (> 4 in. drameter and o it. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants <i>NOTE: The 20% stated in early printings of the manual on page 78 is an error</i>. 	0
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	3

Wetland name or number 15D

H 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water (relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points = points = 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = points = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = som (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = Som (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = Mo paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. points = Mo paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK. points = No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK.	Figure
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripariat or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are 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 ripariat or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	n at n 1 to

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	
 In 2.5 <u>Netator adjacent to onlet priority habitats insted by wDFw</u> (see j. 62). (see fiew dia complete descriptions of WDF w priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gow/hab/phslist.htm</u>) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years of dwest of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). K Riparian: The area adjacent to aquatic systems with flowing water that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore,	3
If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
 H 2.4 <u>Wetland Landscape</u>: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 	3
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
 There are no wetlands within 1/2 milepoints = 0 H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4 	8
TOTAL for H 1 from page 8	3
Total Score for Habitat Functions Add the points for H 1 and H 2; then 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.

C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt.	
	$YES = Go to SC 1.1 \qquad NO \qquad X$	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat.
	The wettand is relatively undisturbed (nas no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. I
	 At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Ratin I/II
C2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	a
	or endangered plant species?	Cat]
	YES = Category 1 NO not a Heritage Wetland	
C3	<u>Bogs</u> (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat.]

	Ecrected Wotlands (res. r. 00)				
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of ace OB have a diameter at breast height (dbh) of 22 inches (81 cm or				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more). NOTE: The criterion for dbh is based on measurements for unlend forests. Two hundred year old trees				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I NO = X not a forested wetland with special characteristics	Cat. I			
C.C.E	Wetlands in Coastal Lagoons (see p. 91)				
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.				
	The wetland is larger than 1/10 acre (4350 square ft.)				
	$\mathbf{YES} = \mathbf{C} ategory \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{C} ategory \ \mathbf{II}$	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 				
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	YES = Category II NO = go to SC 6.2	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

Wetland name or number 15E

	Version 2 – Updated July	2006 to in	RM – WESTERN WA crease accuracy and reproducib ew WDFW definitions for prior	oility among users		
Name of v	wetland (if known): <u>15E</u>		_	Date of site visit:	01-30-09 & (09-12-13
Rated by:	Colin Worsley / Matt Maynard Train	ed by Eco	ology? Yes <u>X</u> No	Date of trainin	g: <u>11-2005 /</u>	04-2006
SEC: 07	TOWNSHIP: 24N	RANG	E: <u>06E</u> Is S/T/R i	n Appendix D? Y	es N	lo <u>X</u>
	Map of wetland unit: Fig	gure	Estimated s	size 0.05 acre	_	
		SUMMA	ARY OF RATING			
Category	based on FUNCTIONS provided by	wetland:	I II	III	IV	X
	Category I = Score > 70		Score for Water Quality	Functions	1	7
	Category II = Score $51 - 69$		Score for Hydrologic		14	
	Category III = Score 30 – 50		Score for Habitat	t Functions	10	
	Category IV = Score < 30		TOTAL Score for	r Functions	28	
Category	based on SPECIAL CHARACTERIST	CS of We	etland I II	Does	not apply	X
	Final Categor	y (choos	se the "highest" category f	rom above")	IV	
	Summary of basic inf	ormatior	n about the wetland unit.			
	Wetland Unit has Special		Wetland HGM Cla			
	Characteristics Estuarine		used for Rating 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	Х	Check if unit has multip HGM classes present	ple		
	wetland being rated meet any of the c otect the wetland according to the regul					ou will
	Check List for Wetlands th (in addition to the protection				YES	NO
SP1. Ha	s the wetland unit been documented as a	a habitat	for any Federally listed Th	hreatened or		Х
	dangered animal or plant species (T/E s					
	the purposes of this rating system, "do	cumented	d" means the wetland is on	the appropriate		
	te or federal database.					17
SP2 Ha	s the wetland unit been documented as l	hahitat fo	or any State listed Threaten	ned or		Х

SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or	
	Endangered animal species? For the purposes of this rating system, "documented" means the	
	wetland is on the appropriate state database. Note: Wetlands with State listed plant species	
	are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	
SP/	Does the wetland unit have a local significance in addition to its functions? For example, the	

SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.

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

X X

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	NO – go to 2 YES – the wetland class is Ti If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		Estuarine wetlands were categorized separately in the earlier editions, and sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	
2.		rrce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	method along is Flots
	NO – go to 3 YES – The If your wetland can be classified as a "Flats" wetland,	wetland class is Flats use the form for Depressional wetlands
3.	Does the entire wetland meet both of the following criteria	
5.		nores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	cres (8ha) in size;
	At least 30% of the open water area is deeper	
		wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria? The wetland is on a slope (<i>slope can be very</i>	aradual)
		lirection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale v	
	The water leaves the wetland without being	
		e types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep). wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		re it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once e	very two years. sions that are filled with water when the river is not flooding.
	1	wetland class is Riverine
6.		hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the	nan the interior of the wetland.
	NO – go to 7 YES – Th	e wetland class is Depressional
7.		vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seen wetland may be ditched, but has no obvious natural outlet.	
		e wetland class is Depressional
8.	0	ntains several different HGM classes. For example, seeps at the base of a
0.		a depressional wetland has a zone of flooding along its sides. GO
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		r wetland. NOTE: Use this table only if the class that is recommended in wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repre	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe Salt Water Tidal Fringe and any other class of	Depressional Treat as ESTUARINE under wetlands with special
	freshwater wetland	characteristics
If y	you are unable still to determine which of the above criteria	apply to your wetland, or you have more than 2 HGM classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
1	Does the wetland have the <u>potential</u> to improve water quality?	per box) $(saa p 38)$
)1	Does the wetland have the <u>potential</u> to improve water quanty: D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38)
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation > = 95% of area points = 5	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 	0
	 Wetland has persistent, ungrazed vegetation < 1/10 of area	0
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
ļ	• Area seasonally ponded is > 1/2 total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	Map of Hydroperiods	
	Total for D 1Add the points in the boxes above	2
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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Wintiplie
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	4
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1
D 3		(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>)	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For</i> 	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft. 	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft. D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft. D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit	

Wetland name or number <u>15E</u>

D 4	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>		
	indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. X 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		
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	14	

Thes	se questions apply to wetlands of all HGM classes.	Points		
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)		
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?			
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants	Figure		
	Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-			
	cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have:Map of Cowardin vegetation classes4 structures or more points = 43 structures points = 22 structures points = 11 structure 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 1/4 acre to count (see text for descriptions of hydroperiods). X Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2	Figure		
	Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland			
	Freshwater tidal wetland = 2 points Map of hydroperiods			
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1		
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.			
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	Figure 0		
	Use map of Cowardin classes.			
	H 1.5 Special Habitat Features (see p. 77):			
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning	0		
	 (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants <i>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</i> 			
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	2		

Wetland name or number 15E

2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 5 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. > 95% circumference. points = 4 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. 00 paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference.	Figure
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects t estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	ut o 1

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (full descriptions in WDFW PHS report p. 158).	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	2
a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are $> 2 \text{ m}$ (6.5 ft) in height. Priority logs are $> 30 \text{ cm}$ (12 in) in diameter at the largest	
end, and > 6 m (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	2
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 mile	
• There are no wetlands within $1/2$ milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	2
 Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1 	10
✓ I that score for flabitat Functions And the points for fi 1 and fi 2, then 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.

C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. 1
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. I
	 At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Ratin I/II
C2	Natural Heritage Wetlands (see p. 87)	
€4	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	<i>question is used to screen out most sites before you need to contact WNHP/DNR.)</i> S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?	Cat 1
	YES = Category 1 NO not a Heritage Wetland	
C3	<u>Bogs</u> (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO =$ go to question 4NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 2 as a significant	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat.

SC4	Forested Wetlands (see p. 90)						
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish						
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland						
	based on its function.						
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a						
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)						
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or						
	more).						
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees						
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW						
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.						
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old						
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than						
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	a . •					
	less than that found in old-growth.	Cat. I					
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics						
SC5	<u>Wetlands in Coastal Lagoons</u> (see p. 91)						
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated						
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.						
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the</i>						
	bottom.)						
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon						
	SC 5.1 Does the wetland meet all of the following three conditions?						
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).						
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed						
	or un-mowed grassland.	Cat. I					
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I					
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Category II}$	Cat. II					
SC6	Interdunal Wetlands (see p. 93)						
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or						
	WBUO)?						
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating						
	If you answer yes you will still need to rate the wetland based on its functions.						
1	In practical terms that means the following geographic areas:						
	• Long Beach Peninsula lands west of SR 103						
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 						
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?						
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?						
	YES = Category III	Cat. III					
	Category of wetland based on Special Characteristics	2000					
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.						
•	choose the highest ruting if welland fulls this several categories, and record on p. 1.						

Wetland name or number 18BC

	WETLAND RAT Version 2 – Updated July Updated Oct. 2008	y 2006 to inci	rease accuracy		among users			
Name of wetlar	nd (if known): 18BC				Date of	site visit	: 03-1	1-14
Rated by: Colin	n Worsley / Matt Maynard Traine	ed by Ecolo	ogy? Yes _	<u>X</u> No	Date of trai	ning: <u>11</u>	<u>-2005 / (</u>	04-2006
SEC: 06	TOWNSHIP: 24N	RANGE:	06E	Is S/T/R in A	ppendix D?	Yes	١	No <u>X</u> _
	Map of wetland unit: Fi	gure		Estimated size	0.02 acre			
		SUMMA	RY OF RA	TING				
Category base	d on FUNCTIONS provided by	wetland:	I	II	III	X	_ IV	
	Category I = Score > 70		Score for	Water Quality Fu	inctions		24	
	ategory II = Score 51 - 69			or Hydrologic Fu			14	
	tegory III = Score $30 - 50$			ore for Habitat Fu			6	
	tegory IV = Score < 30		то	FAL Score for Fu	unctions		44	
	on SPECIAL CHARACTERIST							
	Final Catego Summary of basic inf	•	-		above")		III	
	Wetland Unit has Special Characteristics			nd HGM Class				
	Estuarine		Depressio	d for Rating	X			
	Natural Heritage Wetland		Riverine					
	Bog		Lake-frin	ge				
	Mature Forest		Slope					
	Old Growth Forest		Flats					
	Coastal Lagoon		Freshwat	er Tidal				
	Interdunal							
	None of the above	X		nit has multiple ses present				
	nd being rated meet any of the of the wetland according to the regu							ou will
	Check List for Wetlands th (in addition to the protection						YES	NO
SP1. Has the	wetland unit been documented as				itened or			X

 SP1. Indefinite and the obstant optimized as a matching for any Federally infed The definition of the specifies of the specifies of the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.

 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 X

 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 X

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or
 X

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

in a local management plan as having special significance.

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic						
1.							
	NO – go to 2 YES – the wetland class is Tie If yes, is the salinity of the water during periods of an						
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)					
	If your wetland can be classified as a Freshwater Tidal Fringe	e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it					
		narine in the first and second editions of the rating system are called Salt					
		stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please					
	note, however, that the characteristics that define Category I a						
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water					
	runoff are NOT sources of water to the unit.						
		vetland class is Flats					
2	If your wetland can be classified as a "Flats" wetland,	8					
3.	Does the entire wetland meet both of the following criteria The vegetated part of the wetland is on the sh	? ores of a body of permanent open water (without any					
	vegetation on the surface) where at least 20 av						
	At least 30% of the open water area is deeper	than 6.6 (2 m)?					
	NO – go to 4 YES – The v	vetland class is Lake-fringe (Lacustrine Fringe)					
4.	Does the entire wetland meet all of the following criteria?						
	The wetland is on a slope (slope can be very g	gradual). irection (unidirectional) and usually comes from seeps. It may					
	flow subsurface, as sheetflow, or in a swale w						
	The water leaves the wetland without being i						
		types of wetlands except occasionally in very small and					
		pressions are usually <3 ft diameter and less than 1 foot deep).					
5		vetland class is Slope					
5.	Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or						
	river.						
	The overbank flooding occurs at least once ex						
		sions that are filled with water when the river is not flooding					
6		vetland class is Riverine					
6.	the year. This means that any outlet, if present is higher th	hich water ponds, or is saturated to the surface, at some time of an the interior of the wetland.					
		e wetland class is Depressional					
7.	Is the entire wetland located in a very flat area with no obv	ious depression and no overbank flooding. The unit does not					
	pond surface water more than a few inches. The unit seem	s to be maintained by high groundwater in the area. The					
	wetland may be ditched, but has no obvious natural outlet.						
0		e wetland class is Depressional					
8.	Your wetland unit seems to be difficult to classify and probably con- slope may grade into a riverine floodplain, or a small stream within	ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides. GO					
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT					
	AREAS IN THE UNIT (make a rough sketch to help you decide).	Use the following table to identify the appropriate class to use for the					
		wetland. NOTE: Use this table only if the class that is recommended in					
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.						
	HGM Classes within the wetland unit being rated Slope + Riverine	HGM Class to Use in Rating 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					
If۰		apply to your wetland, or you have more than 2 HGM classes					
· · ·)		appris to your working, or you have more than 2 month classes					

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
		per box)
) 1	Does the wetland have the <u>potential</u> to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38)
	 Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet \dots points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	3
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YESpoints = 4NOpoints = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	- igui e
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	8***
	• Area seasonally ponded is > 1/2 total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	4
	• Area seasonarry ponded is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	12
	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44
2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(<i>see p. 44</i>
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	NO.
	Other YES multiplier is 2 NO multiplier is 1	X2
	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	24
-	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	24
<u>, </u>	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(500 p 16
) 3		(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
		4
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	4
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>)	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For</i> 	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). 	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	3
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	3

Wetland name or number <u>18BC</u>

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)				
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity,					
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide					
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>					
	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	Multiplier				
	stream that has flooding problems					
	Other					
	YES multiplier is 2 NO multiplier is 1					
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	14				

Comments: Adjacent property owner said this area floods in winter.

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.	Figure
	If the unit has a forested class check if:The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have:4 structures or more points = 42 structures points = 13 structures points = 1	2
	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	Figure
	cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	0
	H 1.3 <u>Richness of Plant Species</u> (<i>see p. 75</i>):	<u></u>
	Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more class or 3 vegetation classes and open water, the rating is always "high".	s Figure
	Use map of Cowardin class	s.
	High = 3 points [riparian braided channels]	0
	H 1.5 <u>Special Habitat Features</u> (see p. 77):	ts
	Check the habitat features that are present in the wetland. The number of checks is the number of point you put into the next column.	0 It
	H 1 TOTAL Score – potential for providing habitat Add the points in the column abov	2 1

Wetland name or number 18BC

	oes the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 scor per box)
I	2.1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	Figure
I	 12.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	1

 H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft, (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth: 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaccous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requ	0
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If we have $a = 3$ points If we have $a = 3$ points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
 H 2.4 <u>Wetland Landscape</u>: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are 	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other development	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	5
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	1
 Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1 	6
Add the points for H 1 and H 2, then record the result on p. 1	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met.					
C1	Estuarine wetlands? (see p.86)					
~	Does the wetland unit meet the following criteria for Estuarine wetlands?					
	The dominant water regime is tidal,					
	Vegetated, and					
	With a salinity greater than 0.5 ppt.					
	$YES = Go \text{ to } SC 1.1 \qquad NO \underline{X}$					
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1				
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?					
	YES = Category I NO = Category II	Cat. I				
	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 <i>Spartina</i> spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. I				
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Dual				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	Rating I/II				
	or contiguous freshwater wetlands.					
C2	Natural Heritage Wetlands (see p. 87)					
_	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as					
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.					
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>					
	question is used to screen out most sites before you need to contact WNHP/DNR.)					
	S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X					
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	C-4 1				
	or endangered plant species?	Cat 1				
	YES = Category 1 NO not a Heritage Wetland					
C3	Bogs (see p. 87)					
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>					
	wetland based on its function.					
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that					
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2					
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over					
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or					
	pond? YES = go to question 3 NO = is not a bog for purpose of rating					
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,					
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?					
	YES = Is a bog for purpose of rating $NO = go to question 4$ NOTE: If you are uncertain about the extent of mosses in the understory you may substitute thatwith the extent of the e					
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is					
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.					
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western					
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of					
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. l				

SC4	Forested Wetlands (see p. 90)						
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish						
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland						
	based on its function.						
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a						
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)						
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or						
	more).						
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees						
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW						
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.						
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old						
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than						
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally						
	less than that found in old-growth.	Cat. I					
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics						
SC5	Wetlands in Coastal Lagoons (see p. 91)						
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated						
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.						
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5						
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the						
	bottom.)						
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon						
	SC 5.1 Does the wetland meet all of the following three conditions?						
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has						
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).						
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed						
	or un-mowed grassland.	Cat. I					
	The wetland is larger than 1/10 acre (4350 square ft.)	~					
	YES = Category I NO = Category II	Cat. II					
SC6	Interdunal Wetlands (see p. 93)						
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or						
	WBUO)?						
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating						
	If you answer yes you will still need to rate the wetland based on its functions.						
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103						
	• Grayland-Westport lands west of SR 105						
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109						
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?						
	YES = Category II NO = go to SC 6.2	Cat. II					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?						
	YES = Category III	Cat. III					
	Category of wetland based on Special Characteristics						
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.						
	If you answered NO for all types enter "Not Applicable" on p. 1						

Wetland name or number 19A

Version 2 – Updated July 2006 to ir	RM – WESTERN WASHIN ncrease accuracy and reproducibility a ew WDFW definitions for priority had	mong users		
Name of wetland (if known): 19A		Date of sit	e visit: 09-12	2-13
Rated by: Colin Worsley / Matt Maynard Trained by Eco	ology? Yes <u>X</u> No <u>D</u>	ate of training	ng: <u>11-2005 / 0</u>	4-2006
SEC: <u>06</u> TOWNSHIP: <u>24N</u> RANG	E: <u>06E</u> Is S/T/R in App	oendix D? Y	/es N	lo <u>X</u> _
Map of wetland unit: Figure	Estimated size 0	0.02 acre		
SUMM	ARY OF RATING			
Category based on FUNCTIONS provided by wetland:	I II	III	IV	X
Category I = Score > 70	Score for Water Quality Fund	ctions	12	
Category II = Score 51 - 69	Score for Hydrologic Fund	ctions	8	
Category III = Score $30 - 50$	Score for Habitat Functions 7			
Category IV = Score < 30	TOTAL Score for Fund	ctions	27	7
Category based on SPECIAL CHARACTERISTICS of W	I II	L	a not opply	∟ v
Final Category (choo	se the "highest" category from a	bove")	IV	
Summary of basic information	n about the wetland unit.			
Wetland Unit has Special	Wetland HGM Class			
Characteristics Estuarine	used for Rating Depressional	X		
Natural Heritage Wetland	Riverine	<u> </u>		
Bog	Lake-fringe			
Mature Forest	Slope			
Old Growth Forest	Flats			
Coastal Lagoon	Freshwater Tidal			
Interdunal				
None of the above X	Check if unit has multiple HGM classes present			
Does the wetland being rated meet any of the criteria be need to protect the wetland according to the regulations re				ou will
Check List for Wetlands that Need (in addition to the protection recomm			YES	NO

SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	$\frac{NO - go to 2}{VES} - the wetland class is Ti$	
	If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		Estuarine wetlands were categorized separately in the earlier editions, and
		sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	
2.	The entire wetland unit is flat and precipitation is only sou	urce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit. NO - go to 3 $YES - The vector$	wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
5.		ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	
		wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (<i>slope can be very</i> ,	
	flow subsurface, as sheetflow, or in a swale v	lirection (unidirectional) and usually comes from seeps. It may without distinct banks
	The water leaves the wetland without being	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
	· · · · · · · · · · · · · · · · · · ·	re it gets inundated by overbank flooding from that stream or
	river. The overbank flooding occurs at least once ev	very two years
		sions that are filled with water when the river is not flooding.
		wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in whether the second se	hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the	
	NO – go to 7 YES – Th	e wetland class is Depressional
7.		vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet. No $-$ go to 8 YES $-$ Th	e wetland class is Depressional
0		
8.	slope may grade into a riverine floodplain, or a small stream within	ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides GO
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
	1	wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represent	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
	freshwater wetland	characteristics
If y	you are unable still to determine which of the above criteria	apply to your wetland, or you have more than 2 HGM classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

~	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
1		per box)
) 1	Does the wetland have the <u>potential</u> to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	3
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YES points = 4 NO points = 0 1.2 Characteristic for the set of the set	0
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	0
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	1
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	 ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	 Area seasonally ponded is > 1/2 total area of wetland	2
	• Area seasonally ponded is < 1/4 total area of wetland points = 0	
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplie
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	maniprio
	Other	
		X2
	YES multiplier is 2 NO multiplier is 1	<u>X2</u>
•	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	
•	YES multiplier is 2 NO multiplier is 1	12
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?	12
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit	12 (see p.46)
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	12 (see p.46)
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	12 (see p.46)
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	12 (see p.46)
• D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	12 (see p.46) 4
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet) points = 4• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1(If ditch is not permanently flowing treat unit as "intermittently flowing")• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	12 (see p.46) 4
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet) points = 4• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1(If ditch is not permanently flowing treat unit as "intermittently flowing")• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0D 3.2Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	12 (see p.46) 4
• D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet) points = 4• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0D 3.2Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	12 (see p.46) 4
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	12 (see p.46) 4
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of outlet	12 (see p.46) 4
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	12 (see p.46) 4
• D 3	VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	12 (see p.46) 4 0
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	12 (see p.46) 4 0
◆ D 3	VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	12 (see p.46) 4 0
◆	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	12 (see p.46) 4 0
◆ D 3	VES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	12 (see p.46) 4 0

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D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)		
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>			
	 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			
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	8		

Thes	se question	is apply to wetlands of all HGM classes.		Points
	HABITA	T FUNCTIONS – Indicators that wetland functions to provide impo	rtant habitat.	(only 1 score per box)
H 1	Does the	wetland have the <u>potential</u> to provide habitat for many species?		
	(]	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardi 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acros Aquatic Bed K Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)		Figure
	c	<i>f the unit has a forested class check if:</i> The forested class has 3 out of 5 strata (canopy, sub-canopy, sh cover) that each cover 20% within the forested polygon.	arubs, herbaceous, moss/ground- ap of Cowardin vegetation classes 3 structures points = 2 1 structure	0
		<u>Aydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the w	vetland The water regime has to	Figure
	2 2 2	cover more than 10% of the wetland or 1/4 acre to count (see text for Permanently flooded or inundated 4 or X Seasonally flooded or inundated 3 or Occasionally flooded or inundated 2 typ X Saturated only 1 typ Permanently flowing stream or river in, or adjacent to, the wetl Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	r descriptions of hydroperiods). more types present points = 3 more types presentpoints = 2 pes presentpoints = 1 pe presentpoints = 0 and	1
	-	Freshwater tidal wetland = 2 points	Map of hydroperiods	
	C S H L	<u>5 – 19</u>		1
	Ι	nterspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Coward he classes and unvegetated areas (can include open water or mudflats) is	high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and	Figure
	N	Jone = 0 points Low = 1 point Moderate = 2 points	open water, the rating is always "high".	
		High = 3 points [riparian braided channels]	Use map of Cowardin classes.	0
		pecial Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The numb	per of checks is the number of points	
		 Large, downed, woody debris within the wetland. The number ou put into the next column. Large, downed, woody debris within the wetland (> 4 in. diamed Standing snags (diameter at the bottom > 4 inches) in the wetland. Undercut banks are present for at least 6.6 ft. (2m) and/or overl 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the stable steep banks of fine material that might be used by beave (> 30 degree slope) OR signs of recent beaver activity are present or yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or wood are permanently or seasonally inundated (structures for egg-lay Invasive plants cover less than 25% of the wetland area in each NOTE: The 20% stated in early printings of the manual on page 	eter and 6 ft. long) ind hanging vegetation extends at least unit, for at least 33 ft. (10m) is or muskrat for denning ent (<i>cut shrubs or trees that have</i> ly branches are present in areas that <i>ving by amphibians</i>) is stratum of plants	0
	H	I 1 TOTAL Score – potential for providing habitat	Add the points in the column above	2

Wetland name or number 19A

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference	5 4 4 3 3 1 2 2 1 0 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? 	n at n 1 to

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met.	
C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	0.41
	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 <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. 1 Cat. 1
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Ratin I/II
C2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat
C3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sika spruce, subalpine fir, western red cedar, western how for the species in component of the western is a bog for over you for the species in component of the western developed to avoid the avoid for the species in cover you way substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat.]

	and name of number <u>19A</u>						
SC4	<u>4</u> Forested Wetlands (see p. 90)						
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish						
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland						
	based on its function.						
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a						
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)						
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or						
	more).						
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees						
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW						
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.						
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old						
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than						
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally						
	less than that found in old-growth.	Cat. I					
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics						
SC5	Wetlands in Coastal Lagoons (see p. 91)						
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated						
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.						
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5						
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the						
	bottom.)						
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon						
	SC 5.1 Does the wetland meet all of the following three conditions?						
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has						
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).						
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed						
	or un-mowed grassland. The weeken d is larger than $1/10$ core (4250 course ft.)	Cat. I					
		C (H					
		Cat. II					
SC6	Interdunal Wetlands (see p. 93)						
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?						
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating						
	If you answer yes you will still need to rate the wetland based on its functions.						
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103						
	• Grayland-Westport lands west of SR 105						
	Ocean Shores-Copalis – lands west of SR 115 and SR 109						
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?						
	YES = Category II NO = go to SC 6.2	Cat. II					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?						
	YES = Category III	Cat. III					
	Category of wetland based on Special Characteristics						
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.						
	If you answered NO for all types enter "Not Applicable" on p. 1	NA					

	Version 2 – Updated Ju	uly 2006 to inc	RM – WESTERN crease accuracy and repro w WDFW definitions for	oducibility am	ong users		
Name of w	etland (if known): <u>19B</u>			Date of	site visit: <u>0</u>	<u>5-05-09 (rev: 0</u>	<u> 3-11-14)</u>
Rated by:	Colin Worsley / Matt Maynard	Trained by 1	Ecology? Yes <u>X</u>	No Da	te of traini	ng: <u>11-2005</u> /	04-2006
SEC:	06 TOWNSHIP: 24N	RANGE	: <u>06E</u> Is S/	T/R in Appe	endix D? Y	Yes N	No <u>X</u>
	Map of wetland unit:	Figure	Estima	nted size <u>~0</u>	.36 acre		
		SUMMA	RY OF RATING				
Category b	oased on FUNCTIONS provided b				_ III	<u>X</u> IV	
	Category I = Score > 70		Second for Water O	uality Eurot	:	20	_
	Category II = Score > 70 Category II = Score 51 - 69		Score for Water Que Score for Hydro	•		4	
	Category III = Score $30 - 50$		Score for H	•	-	11	
	Category IV = Score < 30		TOTAL Sco	re for Funct	ions	35	1
Category b	ased on SPECIAL CHARACTERIS	STCS of We	tland I	П	L Doe	es not apply X	
gj			e the "highest" categ		r		7
	C	•		•	ove)		
	Summary of basic i Wetland Unit has Specia		about the wetland u Wetland HGM				
	Characteristics	•	used for Ra				
	Estuarine		Depressional				
	Natural Heritage Wetland		Riverine				
	Bog		Lake-fringe		X		
	Mature Forest		Slope		(x)		
	Old Growth Forest		Flats				
	Coastal Lagoon		Freshwater Tidal				
	Interdunal						
	None of the above	Х	Check if unit has n HGM classes prese	1	Х		
	retland being rated meet any of the tect the wetland according to the reg						ou will
	Check List for Wetlands					YES	NO
	(in addition to the protecti		e				
<i>Enda</i> For t	the wetland unit been documented a ungered animal or plant species (T/2) the purposes of this rating system, "o or federal database.	E species)?					Х
		1 1		, 1			

- SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the
- SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.

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

Х

Х

Х

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 8

Classification of Vegetated Wetlands for Western Washington

	Clussification of Vegetated Ve					
	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic					
1.	Are the water levels in the entire unit usually controlled by					
	NO - go to 2 $YES - the wetland class is The$					
	If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)				
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it				
		uarine in the first and second editions of the rating system are called Salt				
		stuarine wetlands were categorized separately in the earlier editions, and				
		sistency between editions, the term "Estuarine" wetland is kept. Please				
	note, however, that the characteristics that define Category I a					
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water				
	runoff are NOT sources of water to the unit. NO - go to 3 $YES - The vector$	wetland class is Flats				
	If your wetland can be classified as a "Flats" wetland,					
3.	Does the entire wetland meet both of the following criteria					
2.		res of a body of permanent open water (without any vegetation				
	on the surface) where at least 20 acres (8ha) i					
	At least 30% of the open water area is deeper the					
		wetland class is Lake-fringe (Lacustrine Fringe)				
4.	Does the entire wetland meet all of the following criteria?					
	The wetland is on a slope (slope can be very a through the wetland in one d	gradual). irection (unidirectional) and usually comes from seeps. It may				
	flow subsurface, as sheetflow, or in a swale w					
	The water leaves the wetland without being i					
		types of wetlands except occasionally in very small and				
		pressions are usually <3 ft diameter and less than 1 foot deep).				
	$\frac{NO - go \text{ to } 5}{YES} - The v$	wetland class is Slope				
5.	Does the entire wetland meet all of the following criteria?					
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or					
	river. The overbank flooding occurs at least once ev	very two years				
		sions that are filled with water when the river is not flooding.				
		wetland class is Riverine				
6.	Is the entire wetland unit in a topographic depression in wh	hich water ponds, or is saturated to the surface, at some time of				
	the year. This means that any outlet, if present is higher th					
	NO – go to 7 YES – Th					
7.		vious depression and no overbank flooding. The unit does not				
	pond surface water more than a few inches. The unit seem					
	wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – The	e wetland class is Depressional				
8.		ntains several different HGM classes. For example, seeps at the base of a				
0.	slope may grade into a riverine floodplain, or a small stream within					
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT				
		Use the following table to identify the appropriate class to use for the				
		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 v than 10% of the unit, classify the wetland using the class that repres	wetland unit being rated. If the area of the class listed in column 2 is less source more than 90% of the total area				
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating				
	Slope + Riverine Slope + Depressional	Riverine 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	Treat as ESTUARINE under wetlands with special				
T 2	freshwater wetland	characteristics				
		apply to your wetland, or you have more than 2 HGM classes				
w1t	hin a wetland boundary, classify the wetland as Depression	ai for the rating.				

Wetland Rating Form - Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

L	Lake-fringe Wetlands	Points		
	WATER QUALITY FUNCTIONS – Indicators that the wetland unit functions to improve water quality.	(only 1 score		
L 1	Does the wetland unit have the <u>potential</u> to improve water quality? (see p.59)	per box)		
	L 1.1 Average width of vegetation along the lakeshore (use polygons of Cowardin classes):	г.		
	 Vegetation is more than 33 ft. (10m) wide points = 6 Vegetation is more than 16 ft.(5m) wide and < 33 ft points = 3 	Figure		
	 Vegetation is more than 16 ft. (5m) wide and < 33 ft points = 3 Vegetation is more than 6 ft. (2m) wide and < 16 ft points = 1 	6		
	 Vegetation is inore than 0 ft. (2iii) wide and < 10 ft	0		
	• Vegetation is less than 6 ft. widepoints = 0 Map of Cowardin classes with widths marked			
	L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest	Figure		
	points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the			
	dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.			
	• Cover of herbaceous plants is $> 90\%$ of the vegetated area			
	• Cover of herbaceous plants is $> 2/3$ of the vegetated area points = 4	4		
	• Cover of herbaceous plants is > $1/3$ of the vegetated area			
	 Other vegetation that is not aquatic bed or herbaceous covers > 2/3 of the unit points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 			
	• Aquatic bed cover and open water $> 2/3$ of the unit points = 0			
	Map with polygons of different vegetation types	L		
	Add the points in the boxes above	10		
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 polluted surface water flowing			
	through the unit to the lake. Note which of the following conditions provide the sources of pollutants. A unit			
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards			
	Grazing in the wetland or within 150 ft			
	Polluted water discharges to wetland along upland edge			
	$\frac{1}{2}$ Tilled fields or orchards within 150 ft. of wetland			
	 <u>X</u> 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) 	Multiplier		
	\underline{X} Power boats with gasoline or diesel engines use the lake			
	Other	X2		
	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from L1 by L2; then add score to table on p. 1	20		
		20		
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.			
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.62)		
	L 3 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>):	Figure		
	 (choose the highest scoring description that matches conditions in the wetland) 3/4 of distance is shrubs or forest at least 33 ft. (10m) wide points = 6 	- igui e		
	• 3/4 of distance is shrubs or forest at least 6 ft. (2m) widepoints = 4			
	• 1/4 of distance is shrubs or forest at least 33 ft. (10m) widepoints = 4	2		
	 Vegetation is at least 6 ft. (2m) wide (any type except aquatic bed) points = 2 Vegetation is less than 6 ft. (2m) wide (any type except aquatic bed) points = 0 			
	Aerial photo or map with Cowardin vegetation classes			
	Record the points in the boxes above	2		
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 64)		
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following			
	conditions apply.			
	\underline{X} 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,	Multiplier		
	other wetlands) that can be damaged by shoreline erosion.			
	Other	<u>X2</u>		
	YES multiplier is 2 NO multiplier is 1			
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from L3 by L4; then <i>add score to table on p. 1</i>	4		

Comments: Majority of herbaceous vegetation is maintained lawn.

		ions apply to wetlands of all HGM classes.	Points (only 1 sc	
	HABIT	TAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	per box	
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?			
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants	Figure	
		X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	1	
	H 1.2	2 structures points = 1 1 structure points = 0 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to	Figure	
		cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland X Lake-fringe wetland	2	
		Freshwater tidal wetland = 2 points Map of hydroperiods		
	H 1.3	Richness of Plant Species (see p. 75):Count the number of plant species in the wetland that cover at least 10 ft² (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, purpleloosestrife, Canadian Thistle.If you counted:> 19 species $5 - 19$ speciesList species below if you want to:< 5 species	1	
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.		
		Note: If you have 4 or more classes or 3 vegetation classes and		
		None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high".	Figure	
	(None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Use map of Cowardin classes.		
	Н 1.5	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high". Use map of Cowardin classes. Ise map of Cowardin classes. Special Habitat Features (see p. 77): Ise map of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland	. 1	
	Н 1.5	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high". Use map of Cowardin classes. Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long)	. 1	

Wetland name or number 19B

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	Figure
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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects t estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland:	t o 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.	
 fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 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%; decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW PHS A</i>). Cavers: A naturally occurring cavity, recess, void, or system of interconnected pasages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. Ciffis: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homoge	0
addressed in question H 2.4) H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 	3
 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	6
TOTAL for H 1 from page 8	5
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	11
Commonts:	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This provide the screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

wei		
SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority behitter? If you greave you will still need to rate the wetland	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland have don its function	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old OB have an event of diameters (dbb) even diameters (52 err); ensure even may be less than	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	Cat I
	YES = Category I NO = X not a forested wetland with special characteristics	Cat. I
~~-		
SC5	<u>Wetlands in Coastal Lagoons</u> (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the</i>	
	bottom.)	
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	$\mathbf{YES} = \mathbf{C} ategory I \qquad \mathbf{NO} = \mathbf{C} ategory II$	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 	
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II NO = go to SC 6.2	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
1	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number 20A

state or federal database.

SP3.

SP4.

		WETLAND RAT Version 2 – Updated Ju Updated Oct. 200	ly 2006 to incr	ease accurac		among users		
Name of	f wetland ((if known): 20A				Date of s	ite visit: <u>09</u>	-12-13
Rated by	y: <u>Colin W</u>	<u> Vorsley / Matt Maynard</u> Trai	ned by Ecolo	ogy? Yes	<u>X</u> No	Date of train	ning: <u>11-2005</u>	/ 04-2006
SEC:	06	TOWNSHIP: 24N	RANGE:	06E	Is S/T/R in A	ppendix D?	Yes	No <u>X</u> _
		Map of wetland unit: I	Figure		Estimated size	0.05 acre		
			SUMMAI	RY OF RA	TING			
Categor	y based o	n FUNCTIONS provided by	y wetland:]	[II	III	<u> </u>	
	Cate	egory I = Score > 70		Score for	Water Quality Fu	nctions	18	
		gory II = Score 51 - 69		Score f	or Hydrologic Fu	nctions	16	
	Categ	gory III = Score $30 - 50$		Sco	ore for Habitat Fu	nctions	11	
	Categ	ory IV = $Score < 30$		TO	FAL Score for Fu	nctions	45	
Categor	y based on	SPECIAL CHARACTERIS	TICS of Wet	tland I	II	D	bes not apply	 X
0		Final Catego					III	
		0	•	•				
	[Summary of basic in Wetland Unit has Special Characteristics		Wetla	and HGM Class			
	F	Estuarine Natural Haritaga Watland		Depression Riverine	onal	X		
	-	Natural Heritage Wetland Bog		Lake-frir	ge			
	-	Mature Forest		Slope	57	(x)		
	-	Old Growth Forest		Flats				
		Coastal Lagoon		Freshwat	er Tidal			
		Interdunal						
		None of the above	Х		init has multiple ses present	Х		
		being rated meet any of the wetland according to the reg						you will
		Check List for Wetlands (in addition to the protecti					YES	NO
		land unit been documented a. l animal or plant species (T/I	s a habitat fo			itened or		X

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

Х

Х

Х

For the purposes of this rating system, "documented" means the wetland is on the appropriate

Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or

in a local management plan as having special significance.

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	NO – go to 2 YES – the wetland class is Tie	
	If yes, is the salinity of the water during periods of and	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and
		istency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I ar	
2.	The entire wetland unit is flat and precipitation is only sou	
	runoff are NOT sources of water to the unit.	
		vetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	use the form for Depressional wetlands.
3.	Does the entire wetland meet both of the following criteria	?
		ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 ac	
	At least 30% of the open water area is deeper	
		vetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very g	
		irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w The water leaves the wetland without being i	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		vetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		e it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once ev	
		ions that are filled with water when the river is not flooding
		vetland class is Riverine
6.		hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher th NO - go to 7 $YES - The$	e wetland class is Depressional
7		
7.	pond surface water more than a few inches. The unit seem	ious depression and no overbank flooding. The unit does not
	wetland may be ditched, but has no obvious natural outlet.	s to be maintained by high groundwater in the area. The
		e wetland class is Depressional
8.		tains several different HGM classes. For example, seeps at the base of a
0.	slope may grade into a riverine floodplain, or a small stream within	
		SIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repres	ents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics
If v		apply to your wetland, or you have more than 2 HGM classes
	hin a wetland boundary, classify the wetland as Depression	

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
0.4		per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 	Figure
	 Unit is a depression with no surface water reaving it (no outer)	0
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	2
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of areapoints = 5 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 	
	• We than a has persistent, ungrazed vegetation $> = 1/2$ of a real points $= 5$ • We than a has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	8
	• Area seasonally ponded is > 1/2 total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	2
	• Area seasonarry poinced is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	9
D 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44
U 4	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see <i>p</i> . 44
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	F
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	_
D 3	Does the wetland have the potential to reduce flooding and erosion?	(see p.46
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	• Unit is a depression with no surface water leaving it (no outlet)	
	 Unit is a depression with no surface water leaving it (no outlet)	
	 Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	2
	 Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") 	2
	 Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 	2
	 Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For</i> 	2
	 Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). 	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	2 3
	 Unit is a depression with no surface water leaving it (no outlet)	2
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry)</i>. Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	2 3

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply</i> .	
	Wetland is in a headwater of a river or stream that has flooding problems.	
	 Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems 	Multiplier
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
٠	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	16

Thes	se quest	ons apply to wetlands of all HGM classes.		Points
	HABI	CAT FUNCTIONS – Indicators that wetland functions to provide impo	rtant habitat.	(only 1 score per box)
H 1	Does t	he wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardi 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres		Figure
		If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, sh cover) that each cover 20% within the forested polygon.	arubs, herbaceous, moss/ground- ap of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0	0
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the w	vetland The water regime has to	Figure
		cover more than 10% of the wetland or 1/4 acre to count (see text forXPermanently flooded or inundated4 orXSeasonally flooded or inundated3 orOccasionally flooded or inundated2 type	r descriptions of hydroperiods). more types present points = 3 more types presentpoints = 2 pes presentpoints = 1 pe presentpoints = 0 and	2
	Н 1.3	<u>Richness of Plant Species</u> (see p. 75):	Map of hydroperiods	
		Count the number of plant species in the wetland that cover at least 1species can be combined to meet the size threshold)You do not have to name the species. Do not include Eurasian Milfoloosestrife, Canadian Thistle.If you counted: > 19 s $5 - 19$		1
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Coward the classes and unvegetated areas (can include open water or mudflats) is		
		None = 0 points Low = 1 point Low = 2 points Moderate = 2 points	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
			Use map of Cowardin classes.	
	(High = 3 points [riparian braided channels]		0
	H 1.5	<u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The numb	har of chacks is the number of points	
		 Check the habitat features that are present in the wetland. The number you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diamed Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or over 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the stable steep banks of fine material that might be used by beaver (> 30 degree slope) OR signs of recent beaver activity are present or yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or wood are permanently or seasonally inundated (structures for egg-lar Invasive plants cover less than 25% of the wetland area in each NOTE: The 20% stated in early printings of the manual on page 	eter and 6 ft. long) ind hanging vegetation extends at least unit, for at least 33 ft. (10m) is or muskrat for denning ent (<i>cut shrubs or trees that have</i> ly branches are present in areas that <i>ying by amphibians</i>) is stratum of plants	0
		H 1 TOTAL Score – potential for providing habitat	Add the points in the column above	3

Wetland name or number 20A

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 so per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring	5 4 4 3 3 1 2 2 1
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR 	at 1 1

	TOTAL for H 1 from page 8	3
II 2 IOTAL		
	Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
	no wetlands within 1/2 milepoints = 0	
	2 milepoints = 3 t least 1 wetland within 1/2 milepoints = 2	
• The wetla	nd fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
• There are	at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	nd is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe within 1/2 milepoints = 5	
relatively but connec	at least 3 other wetlands within 1/2 mile, and the connections between them are undisturbed (light grazing between wetlands OK, as is lake shore with some boating, ctions should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
addressed in question H 2.4 <u>Wetland Lar</u>	H 2.4) <u>ndscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
If wetland	I has 1 priority habitat = 1 point No habitats = 0 points vetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
	has 3 or more priority habitats = 4 points has 2 priority habitats = 3 points	
end, and > 6 n		
to enable cavit	s: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics ty excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
andesite, and/	or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	than 7.6 m (25 ft) high and occurring below 5000 ft. enous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
rock, ice, or of	ther geological formations and is large enough to contain a human.	
	<i>t: pp. 167-169 and glossary in Appendix A).</i> ally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
and Puget Sou	and Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	ional life history requirements for instream fish and wildlife resources. Iatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
<u>X</u> Instream: The	combination of physical, biological, and chemical processes and conditions that interact to	-
	ies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or <i>full descriptions in WDFW PHS report p. 161</i>).	3
terrestrial ecos	systems which mutually influence each other.	
	nt is important (<i>full descriptions in WDFW PHS report p. 158</i>). area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
generally less	than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
	canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
Old-growth/Ma	ature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
	ife (<i>full descriptions in WDFW PHS report p. 152</i>). alds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	reas and Corridors: Areas of habitat that are relatively important to various species of native	
	Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	connections do not have to be relatively undisturbed.	
	wa.gov/hab/phslist.htm)	
Which of the	e following priority habitats are within 330 ft. (100m) of the wetland unit?	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

C1		
CI	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt.	
	$YES = Go \text{ to } SC 1.1 \qquad NO \underline{X}$	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat.]
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. I
	 At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Ratin I/II
C2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat]
C	Bogs (see p. 87)	
C3	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	wetland based on its function.	
	 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 	
	 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO = go to question 4$ NOTE: If you are uncertain about the extent of mosses in the understory you may substitute thatcriterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH isless than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat.

	and name or number <u>20A</u>				
SC4	Forested Wetlands (see p. 90)				
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
		~			
	or un-mowed grassland. The wetland is larger than $1/10$ ages (4250 square ft.)	Cat. I			
		C (H			
		Cat. II			
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

	Version 2	AND RATIN 2 – Updated July 20 dated Oct. 2008 wi	006 to incr	ease accuracy a	nd reproducibi	ility among users		
Name of	f wetland (if known): 21AC				D	ate of site visit	:: <u>10-31-07 (rev:</u>	<u>03-19-14)</u>
Rated by	y: <u>Colin Worsley / Matt M</u>	<u>Iaynard</u> Train	ned by E	cology? Yes	X No	Date of trai	ining: <u>11-2005</u> /	04-2006
SEC:	06 TOWNSHI	P: 24N F	RANGE:	06E	Is S/T/R ir	Appendix D?	Yes	No X
		and unit: Figu						
	map of weth	and unit. Figu	IC	1	25timated Si	120 <u>-30.40 acre</u>	, <u> </u>	
		S	UMMAI	RY OF RATI	NG			
Categor	y based on FUNCTIONS	provided by we	tland:]	[_ II	III	<u> </u>	
	Category I = Score	> 70		Score for W	ater Quality	Functions	18	
	Category II = Score				Hydrologic		4	
	Category III = Score				for Habitat		12	
	Category IV = Score				L Score for		34	-
G (_ _
Categor	y based on SPECIAL CHA	RACTERISTCS	s of Wetl	and I	11_	D		
	Fina	l Category	(choose	the "highest"	' category fr	om above")	III	
	Summar	y of basic infor	mation a	about the we	tland unit.			
	Wetland Unit				HGM Cla	ss		
	Characte Estuarine	ristics		Used Depressiona	for Rating			
	Natural Heritag	e Wetland		Riverine	*1			
	Bog	,		Lake-fringe		X		
	Mature Forest			Slope		(x)		
	Old Growth For	rest		Flats				
	Coastal Lagoon			Freshwater	Tidal			
	Interdunal							
	None of the above	/e	х	Check if uni HGM classe	1	le X		
	e wetland being rated mee protect the wetland accordin							ou will
	Check List for (in addition to t						YES	NO
E Fe	<i>Tas the wetland unit been do ndangered animal or plant</i> or the purposes of this ratingate or federal database.	species (T/E spe	ecies)?	-			2	X

- SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the
- SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.

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

Х

Х

Х

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 6

Classification of Vegetated Wetlands for Western Washington

		thands for western washington
	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	$\frac{NO - go \text{ to } 2}{VES} - the wetland class is The sector of the $	
	If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	nual low flow below 0.5 ppt (parts per thousand)? NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		Stuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain cons	sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	nd II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	
		wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
	on the surface) where at least 20 acres (8ha) i	res of a body of permanent open water (without any vegetation
	At least 30% of the open water area is deeper the	
		wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (<i>slope can be very</i> a	gradual).
		lirection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being i	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
~		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	as it gots invadeted by everyboals flooding from that stream or
	river.	re it gets inundated by overbank flooding from that stream or
	The overbank flooding occurs at least once ex	verv two years.
		sions that are filled with water when the river is not flooding
	NO – go to 6 YES – The v	wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in wh	hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher th	nan the interior of the wetland.
	NO – go to 7 YES – Th	e wetland class is Depressional
7.		vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet.	
~		e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REC	GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represent	sents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
T C	freshwater wetland	characteristics
		apply to your wetland, or you have more than 2 HGM classes
W1t	hin a wetland boundary, classify the wetland as Depression	al for the rating.

Wetland Rating Form - Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that the wetland unit functions to improve water quality.	(only 1 score
L 1	Does the wetland unit have the <u>potential</u> to improve water quality? (see p.59)	per box)
	L 1.1 Average width of vegetation along the lakeshore (use polygons of Cowardin classes): • Vegetation is more than 33 ft. (10m) wide	Figure
	• Vegetation is less than 6 ft. widepoints = 0 Map of Cowardin classes with widths marked	3
	 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. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Cover of herbaceous plants is > 90% of the vegetated area	Figure
	 Cover of herbaceous plants is > 2/3 of the vegetated area	6
	Add the points in the boxes above	9
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 polluted surface water flowing through the unit to the lake. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Polluted water discharges to wetland along upland edge Tilled fields or orchards within 150 ft. of wetland 	
	X 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	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from L1 by L2; then <i>add score to table on p. 1</i>	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.62)
	 L 3 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (<i>choose the highest scoring description that matches conditions in the wetland</i>) 3/4 of distance is shrubs or forest at least 33 ft. (10m) wide points = 6 	Figure
	 3/4 of distance is shrubs or forest at least 6 ft. (2m) widepoints = 4 1/4 of distance is shrubs or forest at least 33 ft. (10m) widepoints = 4 Vegetation is at least 6 ft. (2m) wide (any type except aquatic bed)points = 2 	2
	• Vegetation is less than 6 ft. (2m) wide (any type except aquatic bed) points = 0 Aerial photo or map with Cowardin vegetation classes	
	Record the points in the boxes above	2
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 64)
	Are there features along the shore that will be impacted if the shoreline erodes? <i>Note which of the following conditions apply.</i> X There are human structures and activities along the upland edge of the wetland (buildings, fields)	(500 pr 01)
	that can be damaged by erosion. There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests, other wetlands) that can be damaged by shoreline erosion.	Multiplier
	Other	X2
		4
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from L3 by L4; then <i>add score to table on p. 1</i>	4

Comments: Majority of herbaceous vegetation is maintained lawn.

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the potential to provide habitat for many species?	
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Figure
	X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	0
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground- cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 4 structure points = 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 1/4 acre to count (see text for descriptions of hydroperiods). 	Figure
	Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 Saturated only 1 type present points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland X Lake-fringe wetland 2 points	2
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	None = 0 points $Low = 1$ point $Moderate = 2$ points $Low = 1$ point $Moderate = 2$ points $Note:$ If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes.	. 0
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points	,
	 you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. 	0
	H 1 TOTAL Score – potential for providing habitatAdd the points in the column above	3

Wetland name or number 21AC

Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed vagetated areas, rocky areas, or open water > 50% circumference. No model (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points = 3 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated	Figure
H 2.2	Arial photo showing buffers 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects the estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: NO = go to H 2.2.3	at 2

H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4 TOTAL for H 1 from page 8	9 3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	9 <u>-</u> <u>-</u> <u>-</u> <u>-</u>
	0
• There are no wetlands within 1/2 milepoints = 0	
• There is at least 1 wetland within 1/2 milepoints = 2	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
disturbedpoints = 3 The wetland frings on a lake with disturbance and there are 2 other lake frings wetlands.	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
• The wetland is Lake-inlige on a lake with intre disturbance and there are 5 other lake-inlige wetlands within $1/2$ milepoints = 5	2
 but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe 	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
addressed in question H 2.4) H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points	
If wetland has 3 or more priority habitats = 4 points	
end, and $> 6 \text{ m} (20 \text{ ft}) \text{ long}.$	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable coult account of 100 m in (20 in) in	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
 Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
WDFW report: pp. 167-169 and glossary in Appendix A).	
and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in</i>	
provide functional life history requirements for instream fish and wildlife resources. Nearshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
X Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
a wet prairie (full descriptions in WDFW PHS report p. 161).	3
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
oak component is important (full descriptions in WDFW PHS report p. 158).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).	
 Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native 	
NOTE: the connections do not have to be relatively undisturbed.	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
http://wdfw.wa.gov/hab/phslist.htm)	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	

Wetland name or number 21B

state or federal database.

		WETLAND RAT Version 2 – Updated Jul Updated Oct. 2003	y 2006 to ind	crease accurac		y among users		
Name o	of wetland	(if known): 21B				Date of	site visit: <u>0</u> 9	9-12-13
Rated b	oy: <u>Colin V</u>	<u> Worsley / Matt Maynard</u> Train	ed by Ecol	logy? Yes	<u>X</u> No	Date of trai	ning: <u>11-2005</u>	/ 04-2006
SEC:	06	TOWNSHIP: 24N	RANGE	: <u>06E</u>	Is S/T/R in A	ppendix D?	Yes	NoX
		Map of wetland unit: F	igure		_ Estimated size	0.08 acre		
			SUMMA	RY OF RA	TING			
Catego	ory based	on FUNCTIONS provided by	wetland:	I	II	III	X IV	
	Ca	tegory I = $Score > 70$		Score for	Water Quality Fu	unctions	14	
	Cat	egory II = Score 51 - 69		Score	for Hydrologic Fu	inctions	10	
	Cate	gory III = Score $30 - 50$		Sc	ore for Habitat Fu	inctions	15	
	Cate	gory IV = Score < 30		ТО	TAL Score for Fu	unctions	39	
Catego	ry based o	on SPECIAL CHARACTERIS	TICS of W	etland I	II	D	oes not apply	X
-	-	Final Catego					III	
		Summary of basic in	formation	about the	wetland unit.			
		Wetland Unit has Special Characteristics			and HGM Class ed for Rating			
		Estuarine		Depressi	U	X		
		Natural Heritage Wetland		Riverine				
		Bog		Lake-fri	nge			
		Mature Forest		Slope				
		Old Growth Forest		Flats				
		Coastal Lagoon		Freshwat	ter Tidal			
		Interdunal						
		None of the above	X		unit has multiple sses present			
				HOW Cla	sses present			
		d being rated meet any of the wetland according to the regu						
need to	protect in	Check List for Wetlands t	hat Need	Additiona	l Protection	sties found i	YES	NO
		(in addition to the protection	n recomm	ended for i	ts category)			
		etland unit been documented as		for any Fede	erally listed Three	atened or		Х
		ed animal or plant species (T/E						
]	For the put	rposes of this rating system, "de	ocumented	i means the	wetland is on the	e appropriate		

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.

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

Х

Х

Х

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	y tides (i.e. except during floods)?
	NO – go to 2 YES – the wetland class is Ti	
	If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	nual low flow below 0.5 ppt (parts per thousand)? NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		Estuarine wetlands were categorized separately in the earlier editions, and
		sistency between editions, the term "Estuarine" wetland is kept. Please
_	note, however, that the characteristics that define Category I a	
2.	The entire wetland unit is flat and precipitation is only sour runoff are NOT sources of water to the unit.	arce (>90%) of water to it. Groundwater and surface water
		wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
		nores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	
		wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	and dual)
	The wetland is on a slope (<i>slope can be very</i> The water flows through the wetland in one d	lirection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale v	
	The water leaves the wetland without being	
		e types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
-		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	re it gets inundated by overbank flooding from that stream or
	river.	Te it gets mundated by overbank hooding from that stream of
	The overbank flooding occurs at least once evaluate the second sec	very two years.
	· · · · ·	sions that are filled with water when the river is not flooding
		wetland class is Riverine
6.		hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher th NO – go to 7 \overline{YES} – Th	
7		A
1.	pond surface water more than a few inches. The unit seem	vious depression and no overbank flooding. The unit does not
	wetland may be ditched, but has no obvious natural outlet.	
		e wetland class is Depressional
8.	Your wetland unit seems to be difficult to classify and probably co	ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	a depressional wetland has a zone of flooding along its sides. GO
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repre-	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics
If v		apply to your wetland, or you have more than 2 HGM classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1		per box)
) 1	Does the wetland have the <u>potential</u> to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	2
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	• Area seasonarry pointed is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	7
) 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44
] 4	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 1
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	<u>A</u> Residential, urban areas, gon courses are wrunn 150 ft. of wetrand	manupine
	Wetland is fed by groundwater high in phosphorus or nitrogen	
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	X2
	Wetland is fed by groundwater high in phosphorus or nitrogen	X2
•	Wetland is fed by groundwater high in phosphorus or nitrogen Other	
♦	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1	
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	14
◆ ○ 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	14 (see p.46
◆ ○ 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	14 (see p.46
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◆) 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	14 (see p.46 2
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◆) 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	14 (see p.40 2
◆ ○ 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	14 (see p.46 2
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◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i> HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland	14 (see p.46 2 0
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	14 (see p.46 2 0
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen WES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	14 (see p.46 2 0
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• D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	14 (see p.46 2 0
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D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply</i> .	
	Wetland drains to a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems X Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	Multiplier
	stream that has flooding problems Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	10

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each cla 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	ss is Figure
	$ \underbrace{\check{X}}_{\text{cover}} \text{ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 \underbrace{\check{X}}_{\text{cover}} \text{ structurespoints}_{\text{cover}} structures$	$\frac{2}{2}$
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has a cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	to Figure
	X Permanently flooded or inundated 4 or more types present points = Seasonally flooded or inundated 3 or more types present points = X Occasionally flooded or inundated 2 types present points = X Saturated only 1 type present points = 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 =	= 3 = 2 = 1 = 0 3
	Freshwater tidal wetland = 2 points Map of hydroperi H 1.3 Richness of Plant Species (see p. 75):	
	In this intermeters of that oppeters (ace p. 15). Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the sa species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p.</i> 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1) the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	, or
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	-
	Use map of Cowardin class High = 3 points Tiparian braided channels]	1 1
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of pryou put into the next column.	oints
	 Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that hav not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants <i>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</i> 	0 ve
	H 1 TOTAL Score – potential for providing habitat Add the points in the column ab	pove 7

Wetland name or number 21B

2 Does	Does the wetland have the <u>opportunity</u> to provide habitat for many species?					
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 5	5 4 8 8 1 2 2 1 2				
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects the estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR 	it co				

 H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. 	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
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.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	3
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
end, and $> 6 \text{ m}$ (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All uses teted wetlands are by definition a priority habitat but are not included in this list. Northy wetlands are	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, 	
but connections should NOT be bisected by paved roads, fill, fields, or other development	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	2
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within $1/2$ mile	
• There is at least 1 wetland within $1/2$ mile	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i>	8
TOTAL for H 1 from page 8	7
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	15
Commontes	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	$\underline{\qquad} \text{ With a salinity greater than 0.5 ppt.} \\ \textbf{YES} = \text{Go to SC 1.1} \qquad \textbf{NO} \ \underline{\qquad} \underline{\qquad} \underline{\qquad} \\ \textbf{X} = \textbf{X}$	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	Cat. I
	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 <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that 	
	 compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over 	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? $YES = go to question 3$ $NO = is not a bog for purpose of rating$	
	 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat I
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Is not a bog for purpose of rating}$	Cat. I

SC4	Forested Wetlands (see p. 90)				
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	a			
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X$ not a forested wetland with special characteristics				
SC5	<u>Wetlands in Coastal Lagoons</u> (see p. 91)				
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the</i>				
	bottom.)				
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)	Cal. I			
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Category II}$	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
500	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	• Long Beach Peninsula lands west of SR 103				
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis lands west of SR 115 and SR 109 				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. 11			
	$\mathbf{YES} = Category III$	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1				

Wetland name or number 21D

	Version 2 – Updated J	July 2006 to ir	RM – WESTERN WASH ncrease accuracy and reproducibility new WDFW definitions for priority h	among users		
Name of v	wetland (if known): 21D			Date of site	visit: 09-2	0-13
Rated by:	Colin Worsley / Matt Maynard Tra	ined by Eco	ology? Yes <u>X</u> No	Date of training	g: <u>11-2005 / 0</u>	4-2006
SEC:	06 TOWNSHIP: 24N	RANG	E: <u>06E</u> Is S/T/R in A	ppendix D? Ye	es N	lo <u>X</u> _
	Map of wetland unit:	Figure	Estimated size	0.15 acre	_	
		SUMM	ARY OF RATING			
Category	based on FUNCTIONS provided b	by wetland:	I II	III	IV	X
	Category I = Score > 70		Score for Water Quality Fu	inctions	2	
	Category II = Score 51 - 69		Score for Hydrologic Fu	inctions	6	
	Category III = Score 30 – 50		Score for Habitat Fu	inctions	10	
	Category IV = Score < 30		TOTAL Score for Fu	inctions	18	
Category	based on SPECIAL CHARACTERI	STICS of W	Vetland I II	Does	not apply	X
	Final Categ	gory (choo	se the "highest" category from	above")	IV	7
	Summary of basic	informatio	n about the wetland unit.			
	Wetland Unit has Specia Characteristics	al	Wetland HGM Class used for Rating			
	Estuarine		Depressional	X		
	Natural Heritage Wetland	1	Riverine			
	Bog		Lake-fringe			
	Mature Forest		Slope	(x)		
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	Х	Check if unit has multiple HGM classes present	Х		
	wetland being rated meet any of the other of the other					ou will
	Check List for Wetlands (in addition to the protect				YES	NO
SP1. Ha	s the wetland unit been documented	as a habitat	for any Federally listed Three	atened or		Х
Enc	langered animal or plant species (T	/E species)?				
	the purposes of this rating system, '	'documented	d" means the wetland is on the	appropriate		
stat	e or federal database.					- -
SP2 Ha	s the wetland unit been documented	as habitat fa	or any State listed Threatened	or		Х

- SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
- SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.

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

Х

Х

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.		
	NO – go to 2 YES – the wetland class is Ti	
	If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fring	NO – Saltwater Tidal Fringe (Estuarine) e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and
		sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	
2.	The entire wetland unit is flat and precipitation is only sou runoff are NOT sources of water to the unit.	rce (>90%) of water to it. Groundwater and surface water
		wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	?
		ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper NO – go to 4 YES – The	than 6.6 (2 m)? wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	wettand class is Lake-II lige (Lacusti lie Filige)
4.	The wetland lise on a slope (slope can be very)	oradual)
		irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being	
		types of wetlands except occasionally in very small and pressions are usually <3 ft diameter and less than 1 foot deep).
		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	······································
		re it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once ev	very two years. sions that are filled with water when the river is not flooding.
		wetland class is Riverine
6.		hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher th	
	NO – go to 7 YES – Th	e wetland class is Depressional
7.		vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet. No $-$ go to 8 YES $-$ The	e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
0.	slope may grade into a riverine floodplain, or a small stream within	
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represented of the wetland using the class that represented the wetland using the wetland using the class that represented the wetland using the w	6
	<i>HGM Classes within the wetland unit being rated</i> Slope + Riverine	HGM Class to Use in Rating 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
		apply to your wetland, or you have more than 2 HGM classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1		per box)
) 1	Does the wetland have the <u>potential</u> to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	1
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	I igui c
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	0
	 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	• Area seasonally ponded is < 1/4 total area of wetland	
	Total for D 1 Add the points in the boxes above	
) 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 4
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	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	Multiplie
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Multiplic
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	2
·	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	<u> </u>
) 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.40
,,	D 3.1 Characteristics of surface water flows out of the wetland unit	(500 p. 10
	• Unit is a depression with no surface water leaving it (no outlet)	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	0
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	
	1 1 1 1 1 1 1 1 1 1	1
	Unit has an unconstricted or slightly constricted surface outlet (<i>normanently flowing</i>) points = 0	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. 	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft. D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft. D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is 10 to 100 times the area of the unit	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft. D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit	0

_		
D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	6

The	e questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Exerct before the plant of the area is a cover)	Figure
	Forested (areas where trees have > 30% cover)If the unit has a forested class check if:	0
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiode) present within the water d. The water regime has to	Figure
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). X Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	1
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points Low = 1 point Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes.	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 (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	0
	H 1 TOTAL Score – potential for providing habitat <i>Add the points in the column above</i>	2

Wetland name or number 21D

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 so per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	Figure _
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR 	1

· · · · · · · · · · · · · · · · · · ·	
 H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm] Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). 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. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). X. Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life histor	3
If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vectored wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
 disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands 	
within 1/2 mile	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	2
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	10

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met.	
C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt.	
	$\mathbf{YES} = \mathbf{Go} \text{ to } \mathbf{SC} 1.1 \qquad \mathbf{NO} \mathbf{X}$	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. 1
	The wettand is relatively undisturbed (has no diking, untring, untring, curtivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. I
	 At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Ratin I/II
C2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat]
GA	Bogs (see p. 87)	
C3	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	wetland based on its function.	
	 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	 pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? 	
	YES = Is a bog for purpose of rating $NO = go to question 4$ NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	 less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant 	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat.]

SC4	Forested Wetlands (see p. 90)				
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	Cat I			
	less than that found in old-growth. YES = Category I NO = X not a forested wetland with special characteristics	Cat. I			
~~-					
SC5	<u>Wetlands in Coastal Lagoons</u> (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the</i>				
	bottom.)				
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)				
	YES = Category INO = Category II	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103				
	 Long Beach Feinhsula lands west of SK 105 Grayland-Westport lands west of SR 105 				
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

Wetland name or number 22AB

Version 2 – Update	d July 2006 to	DRM – WESTERN WASHI increase accuracy and reproducibility a new WDFW definitions for priority ha	mong users		
Name of wetland (if known): 22AB			_ Date of s	ite visit: 09-20	0-13
Rated by: Colin Worsley / Matt Maynard T	rained by Ec	cology? Yes <u>X</u> No <u> </u>	Date of train	ing: <u>11-2005 / 0</u>	4-2006
SEC: 06 TOWNSHIP: 24N	RANC	GE: 06E Is S/T/R in Ap	pendix D?	Yes N	lo X_
		Estimated size	_		
	SUMM	IARY OF RATING			
Category based on FUNCTIONS provided	l by wetland	l: I II	III	<u>X</u> IV	
Category I = Score > 70		Score for Water Quality Fun	ctions	20	7
Category II = Score 51 - 69		Score for Hydrologic Fun	ctions	6	
Category III = $\text{Score } 30 - 50$		Score for Habitat Fun	ctions	20	
Category IV = Score < 30		TOTAL Score for Fun	ctions	46	1
Category based on SPECIAL CHARACTEI	– RISTICS of V	Wetland I II	Do	es not apply	X
		ose the "highest" category from a			
		on about the wetland unit.			
Wetland Unit has Spec Characteristics		Wetland HGM Class used for Rating			
Estuarine		Depressional	X		
Natural Heritage Wetlan Bog	nd	RiverineLake-fringe			
Mature Forest		Slope	(x)		
Old Growth Forest		Flats	(14)		
Coastal Lagoon		Freshwater Tidal			
Interdunal					
None of the above	X	Check if unit has multiple HGM classes present	Х		
Does the wetland being rated meet any of need to protect the wetland according to the					ou will
		d Additional Protection mended for its category)		YES	NO
SP1. Has the wetland unit been documented	d as a habita	t for any Federally listed Threat	ened or		Х

SP1. Has the wetland unit been documented as a habitat for any Federally listed Inreatened or Endangered animal or plant species (T/E species)?
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species

 are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 Image: SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 X

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.
 X

Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic		
1.			
	NO – go to 2 YES – the wetland class is Ti- If yes, is the salinity of the water during periods of an		
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)	
	If your wetland can be classified as a Freshwater Tidal Fringe	e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it	
		aarine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and	
		sistency between editions, the term "Estuarine" wetland is kept. Please	
	note, however, that the characteristics that define Category I a		
2.			
	runoff are NOT sources of water to the unit. NO - go to 3 YES – The v	wetland class is Flats	
	If your wetland can be classified as a "Flats" wetland,		
3.	Does the entire wetland meet both of the following criteria		
	The vegetated part of the wetland is on the sh	ores of a body of permanent open water (without any	
	vegetation on the surface) where at least 20 a		
	At least 30% of the open water area is deeper NO – go to 4 YES – The	than 6.6 (2 m)? wetland class is Lake-fringe (Lacustrine Fringe)	
4.	Does the entire wetland meet all of the following criteria?	(Zweastine Timge)	
	The wetland is on a slope (slope can be very a		
		irection (unidirectional) and usually comes from seeps. It may	
	flow subsurface, as sheetflow, or in a swale w The water leaves the wetland without being is		
		types of wetlands except occasionally in very small and	
	shallow depressions or behind hummocks (de	pressions are usually <3 ft diameter and less than 1 foot deep).	
		wetland class is Slope	
5.	Does the entire wetland meet all of the following criteria?	re it gets inundated by overbank flooding from that stream or	
	river.	te it gets mundated by overbank mooding from that stream of	
	The overbank flooding occurs at least once ev		
		sions that are filled with water when the river is not flooding wetland class is Riverine	
6.		hich water ponds, or is saturated to the surface, at some time of	
0.	the year. This means that any outlet, if present is higher th		
	NO – go to 7 YES – Th	e wetland class is Depressional	
7.		vious depression and no overbank flooding. The unit does not	
	pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet.		
		e wetland class is Depressional	
8.	Your wetland unit seems to be difficult to classify and probably con	ntains several different HGM classes. For example, seeps at the base of a	
	slope may grade into a riverine floodplain, or a small stream within		
		JIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the	
		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	vetland unit being rated. If the area of the class listed in column 2 is less	
	than 10% of the unit, classify the wetland using the class that repres	sents more than 90% of the total area.	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating	
	Slope + Riverine Slope + Depressional	Riverine Depressional	
	Slope + 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 v		apply to your wetland, or you have more than 2 HGM classes	

within a wetland boundary, classify the wetland as **Depressional** for the rating. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
		per box)
)1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 	0
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	1
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	
	YES points = 4 NO points = 0	4
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of areapoints = 5 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 	0
	• We than a has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	0
	• Area seasonally ponded is > 1/2 total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetlandpoints = 2 Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 	0
	• Area seasonarry pointed is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	
) 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 4
) 4	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. +
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multipli
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Multiplie
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
٠	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	20
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	-
) 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.40
	D 3.1 Characteristics of surface water flows out of the wetland unit	· · ·
	• Unit is a depression with no surface water leaving it (no outlet) points = 4	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	0
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	•
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7	
	 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 	0
	 Marks of politing between 2 ft. to < 9 ft. from surface of bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ftpoints = 0	
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	
	 The area of the basin is 10 to 100 times the area of the unit	3
	• The area of the basin is more than 100 times the area of the unitpoints = 0	
		1
	Entire unit is in the FLATS class	

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>	
	 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	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	6

The	These questions apply to wetlands of all HGM classes.				
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.				
H 1					
	H 1.1	Vegetation structure (see P. 72):Check the types of vegetation classes present (as defined by Cowards $1/4$ acre or more than 10% of the area if unit is smaller than 2.5 acrossAquatic Bed X Emergent plantsXScrub/shrub (areas where shrubs have > 30% cover)		Figure	
		\overline{X} Forested (areas where trees have > 30% cover) $\overline{If the}$ unit has a forested class check if: \overline{X} The forested class has 3 out of 5 strata (canopy, sub-canopy, sh cover) that each cover 20% within the forested polygon.	arubs, herbaceous, moss/ground- ap of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0	4	
	H 1.2	<u>Hydroperiods</u> (see p.73):		Figure	
		$\frac{\overline{X}}{\overline{X}}$ Seasonally flooded or inundated 3 or \overline{X} Occasionally flooded or inundated 2 ty	r descriptions of hydroperiods). more types present points = 3 more types presentpoints = 2 pes presentpoints = 1 pe presentpoints = 0	3	
	H 1.3	<u>Richness of Plant Species</u> (<i>see p. 75</i>):	map of nyuroperious		
		Count the number of plant species in the wetland that cover at least 1species can be combined to meet the size threshold)You do not have to name the species. Do not include Eurasian Milfoloosestrife, Canadian Thistle.If you counted: $> 19 \text{ s}$ $5 - 19$		2	
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Coward the classes and unvegetated areas (can include open water or mudflats) is		Figure	
		None = 0 points Low = 1 point $Moderate = 2 points$	or 3 vegetation classes and open water, the rating is always "high".		
	(High = 3 points	Use map of Cowardin classes.	2	
	H 1.5	<u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The numb you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diamo	eter and 6 ft. long)		
		 Standing snags (diameter at the bottom > 4 inches) in the wetla Undercut banks are present for at least 6.6 ft. (2m) and/or over 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the Stable steep banks of fine material that might be used by beave (> 30 degree slope) OR signs of recent beaver activity are pres not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or wood are permanently or seasonally inundated (structures for egg-la Invasive plants cover less than 25% of the wetland area in each NOTE: The 20% stated in early printings of the manual on pa 	hanging vegetation extends at least unit, for at least 33 ft. (10m) er or muskrat for denning ent (<i>cut shrubs or trees that have</i> dy branches are present in areas that <i>ying by amphibians</i>) n stratum of plants	1	
		H 1 TOTAL Score – potential for providing habitat	Add the points in the column above	12	

Wetland name or number 22AB

I 2 Does	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	
Н 2.	1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed"	5 4 8 8 1 2 2 1 0
H 2.:		it 1. 1. 1.

 H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.was.gov/hab/phSist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). 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. Westside Prairies: Herbaccous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 151). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildl	3
If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points	
If we than that 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84). There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	3
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i>	8
TOTAL for H 1 from page 8	12
• Total Score for Habitat Functions Add the points for H 1 and H 2; then 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 Category when the appropriate	
1	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	Cat. I
	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 <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
C2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to 	
	 identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 	
	 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating 	
	 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I

SC4	Forested Wetlands (see p. 90)			
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority babitate? If you answer yes you will still need to rate the wetland			
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland			
	based on its function.			
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)			
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or			
	more).			
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees			
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW			
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.			
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old			
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than			
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally			
	less than that found in old-growth.	Cat. I		
	YES = Category I NO = X not a forested wetland with special characteristics	04012		
SC5	Wetlands in Coastal Lagoons (see p. 91)			
505	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?			
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated			
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.			
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5			
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the			
	bottom.)			
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon			
	SC 5.1 Does the wetland meet all of the following three conditions?			
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has			
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).			
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed			
	or un-mowed grassland.	Cat. I		
	The wetland is larger than 1/10 acre (4350 square ft.)			
	YES = Category I NO = Category II	Cat. II		
SC6	Interdunal Wetlands (see p. 93)			
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or			
	WBUO)?			
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating			
	If you answer yes you will still need to rate the wetland based on its functions.			
	 In practical terms that means the following geographic areas: Long Beach Peninsula lands west of SR 103 			
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 			
	 Orayland-westport rands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 			
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?			
	YES = Category II NO = go to SC 6.2	Cat. II		
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?			
	YES = Category III	Cat. III		
	Category of wetland based on Special Characteristics			
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.			
	If you answered NO for all types enter "Not Applicable" on p. 1	NA		

Wetland name or number 22CD

	Version 2 – Updated July	ING FORM – WE 7 2006 to increase accurate 8 with the new WDFW de	cy and reproducibili	ity among users		
Name of wetlan	d (if known): 22CD			Date of site	visit: <u>10-2</u>	5-13
Rated by: Colin	Worsley / Matt Maynard Traine	ed by Ecology? Yes	<u>X</u> No	Date of trainin		04-2006
SEC: 06	TOWNSHIP: 24N	RANGE: 06E	Is S/T/R in	Appendix D? Y	es]	No X
	Map of wetland unit: Fi					
	map of weballe unit.	gui c		<u>0.40 dere</u>	_	
		SUMMARY OF RA	ATING			
Category based	l on FUNCTIONS provided by	wetland: I	II	III	IV	X
С	ategory I = Score > 70	Score for	Water Quality F	Functions	6	
	ttegory II = Score 51 - 69		for Hydrologic F		7	_
	egory III = Score 30 - 50		ore for Habitat F		9	
		50	ore for Habitat F	Functions	9	-
Cat	segory IV = $Score < 30$	TC	TAL Score for F	Functions	22	
Category based	on SPECIAL CHARACTERIST	TCS of Wetland I	II	Does	s not apply	X
	Final Catego	ry (choose the "high	est" category fro	m above")	IV	٦
	C					
	Summary of basic inf					
	Wetland Unit has Special Characteristics		and HGM Class ed for Rating	s		
	Estuarine	Depressi		X		
	Natural Heritage Wetland	Riverine				
	Bog	Lake-fri	nge			
	Mature Forest	Slope		(x)		
	Old Growth Forest	Flats				
	Coastal Lagoon	Freshwa	ter Tidal			
	Interdunal					
	None of the above	X	unit has multiple sses present	e 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 Additional Protection YES NO						

	(in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic		
1.	Are the water levels in the entire unit usually controlled by NO – go to 2 YES – the wetland class is Ti If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	dal Fringe	
	If your wetland can be classified as a Freshwater Tidal Fring is rated as an Estuarine wetland. Wetlands that were call est Water Tidal Fringe in the Hydrogeomorphic Classification. E	<i>e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it</i> uarine in the first and second editions of the rating system are called Salt Estuarine wetlands were categorized separately in the earlier editions, and sistency between editions, the term "Estuarine" wetland is kept. Please	
	note, however, that the characteristics that define Category I a		
2.	The entire wetland unit is flat and precipitation is only sou	arce (>90%) of water to it. Groundwater and surface water	
	runoff are NOT sources of water to the unit. NO – go to 3 YES – The	wetland class is Flats	
	If your wetland can be classified as a "Flats" wetland,		
3.	Does the entire wetland meet both of the following criteria		
		ores of a body of permanent open water (without any	
	vegetation on the surface) where at least 20 a		
	At least 30% of the open water area is deeper		
4		wetland class is Lake-fringe (Lacustrine Fringe)	
4.	Does the entire wetland meet all of the following criteria? The wetland is on a slope (<i>slope can be very</i>)	aradual)	
		lirection (unidirectional) and usually comes from seeps. It may	
	flow subsurface, as sheetflow, or in a swale v	vithout distinct banks.	
	The water leaves the wetland without being		
		types of wetlands except occasionally in very small and pressions are usually <3 ft diameter and less than 1 foot deep).	
		wetland class is Slope	
5.	Does the entire wetland meet all of the following criteria?	•	
		re it gets inundated by overbank flooding from that stream or	
	river.		
	The overbank flooding occurs at least once ev	very two years. sions that are filled with water when the river is not flooding.	
		wetland class is Riverine	
6.		hich water ponds, or is saturated to the surface, at some time of	
	the year. This means that any outlet, if present is higher th	nan the interior of the wetland.	
	NO – go to 7 YES – Th	e wetland class is Depressional	
7.	Is the entire wetland located in a very flat area with no obv pond surface water more than a few inches. The unit seem	vious depression and no overbank flooding. The unit does not to be maintained by high groundwater in the area. The	
	wetland may be ditched, but has no obvious natural outlet.		
		e wetland class is Depressional	
8.		ntains several different HGM classes. For example, seeps at the base of a	
	slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REC	GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT	
		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		
		wetland unit being rated. If the area of the class listed in column 2 is less	
	than 10% of the unit, classify the wetland using the class that repres		
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating	
	Slope + Riverine Slope + Depressional	Riverine 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	Treat as ESTUARINE under wetlands with special	
Tf -	freshwater wetland	characteristics	
11 7	you are unable suit to determine which of the above criteria	apply to your wetland, or you have more than 2 HGM classes	

if you are unable still to determine which of the above criteria apply to your wetland, or you have more than within a wetland boundary, classify the wetland as **Depressional** for the rating. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
		per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38)
	 Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	2
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YES points = 4 NO points = 0 1.2 Characteristic for the set of the set	0
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation >= 95% of area points = 5 	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	0
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	1
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	 ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	 Area seasonally ponded is > 1/2 total area of wetland	0
	• Area seasonally ponded is $< 1/4$ total area of wetland points $= 0$	0
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	is stream of curvert discharges into wetland that drains developed areas, residential areas, failled	
	fields, roads, or clear-cut logging	Multiplie
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	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	Multiplie
	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	-
•	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	<u>X2</u>
•	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	<u>X2</u>
◆ D 3	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 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	<u>X2</u>
◆ D 3	fields, roads, or clear-cut logging	<u>X2</u>
◆ D 3	<pre>fields, roads, or clear-cut logging</pre>	<u>X2</u>
◆ D 3	<pre>fields, roads, or clear-cut logging</pre>	<u>X2</u> 6 (see p.46)
◆ D 3	<pre>fields, roads, or clear-cut logging</pre>	<u>X2</u>
◆ D 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46)
◆ D 3	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 VES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46) 2
◆ D 3	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 VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46) 2
• D 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46) 2
• D 3	fields, roads, or clear-cut logging	<u>X2</u> 6 (see p.46
• D 3	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 VES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46) 2
◆ D 3	ields, 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 VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46) 2
• D 3	Image: Second	<u>X2</u> 6 (see p.46) 2
• D 3	ields, 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 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46) 2
◆ D 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 6 (see p.46) 2 0
◆ D 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 6 (see p.46) 2
• D 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	6 (see p.46) 2 0

D 4	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	7

The	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 <u>potential</u> to provide habitat for many species?		
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each classified acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants	ss is Figure	
	XScrub/shrub (areas where shrubs have > 30% cover)Forested (areas where trees have > 30% cover)If the unit has a forested class check if:The forested class check if:The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have:4 structures or more points = 42 structures points = 11 structure points	= 2	
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has t	Figure	
	cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = Seasonally flooded or inundated 3 or more types presentpoints = X Occasionally flooded or inundated 2 types presentpoints = X Saturated only 1 type presentpoints = Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	2 1 0 1	
	Freshwater tidal wetland = 2 points Map of hydroperi	ods	
	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 sa 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: > 19 species	1	
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	or	
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".		
	Use map of Cowardin cla High = 3 points [riparian braided channels]	sses. 1	
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of performing you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long)	oints	
	 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 le 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that hav not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants 	e 0	
	NOTE: The 20% stated in early printings of the manual on page 78 is an error.H 1 TOTAL Score – potential for providing habitatAdd the points in the column ab	ove 4	

Wetland name or number 22CD

Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 scor per box)
H 2.1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 5 00m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. > 95% circumference. > 95% circumference. > 95% circumference. > 95% circumference. > 25% circumference. > 95% circumference. > 95% circumference. > 25% circumference. > 00m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 If buffer does not meet any of the criteria above: No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK	Figure
 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 points 	1

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
<i>NOTE: the connections do not have to be relatively undisturbed.</i> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (full descriptions in WDFW PHS report p. 158).	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	0
Instream: The combination of physical, biological, and chemical processes and conditions that interact to	0
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are $> 2 \text{ m}$ (6.5 ft) in height. Priority logs are $> 30 \text{ cm}$ (12 in) in diameter at the largest	
end, and $> 6 \text{ m}$ (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	U
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	4
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	9
Commonts:	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species	Cat. I
	that cover more than 10% cover of hon-native spant species. If the hon-native spanting species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
6C3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)					
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
~	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.					
	The wetland is larger than 1/10 acre (4350 square ft.)					
	YES = Category INO = Category II	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	• Long Beach Peninsula lands west of SR 103					
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II				
	YES = Category III	Cat. III				
		Cut III				
	Category of wetland based on Special Characteristics					
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					

Wetland name or number 22E

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats					
Name of wetland (if known): 22E	Date of site visit: 10-25-13				
Rated by: Colin Worsley / Matt Maynard Trained	1 by Ecology? Yes <u>X</u> No <u>Date of training: 11-2005 / 04-2006</u>				
SEC: 06 TOWNSHIP: 24N H	RANGE: <u>06E</u> Is S/T/R in Appendix D? Yes NoX _				
Map of wetland unit: Fig	igure Estimated size <0.01 acre				
S	SUMMARY OF RATING				
Category based on FUNCTIONS provided by we	vetland: I II III IVX				
Category I = Score > 70	Score for Water Quality Functions 8				
Category II = Score 51 - 69	Score for Hydrologic Functions 9				
Category III = Score $30 - 50$	Score for Habitat Functions 9				
Category IV = Score < 30	TOTAL Score for Functions26				
Category based on SPECIAL CHARACTERISTIC	CS of Wetland I Does not apply X				
	y (choose the "highest" category from above") IV				
Wetland Unit has Special	Wetland HGM Class				
Characteristics	used for Rating				
Estuarine	Depressional X				
Natural Heritage Wetland	Riverine Lake-fringe				
Bog Mature Forest	Slope				
Old Growth Forest	Flats				
Coastal Lagoon	Freshwater Tidal				
Interdunal					
None of the above	X Check if unit has multiple HGM classes present				
need to protect the wetland according to the regulat	There is a set of the set of the				

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	tides (i.e. except during floods)?
	NO – go to 2 YES – the wetland class is Ti	
	If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	
2.	The entire wetland unit is flat and precipitation is only sou	
2.	runoff are NOT sources of water to the unit.	ree (290%) of water to it. Groundwater and sufface water
		wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
		ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	
	NO – go to 4 YES – The v	wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very a	
		irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being i	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep). wetland class is Slope
5	Does the entire wetland meet all of the following criteria?	
5.		re it gets inundated by overbank flooding from that stream or
	river.	to it gots mandated by overbank nooding from that stream of
	The overbank flooding occurs at least once ev	very two years.
		sions that are filled with water when the river is not flooding
	NO – go to 6 YES – The v	wetland class is Riverine
6.		hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher th	
		e wetland class is Depressional
7.		vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet.	
		e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represented the state of the sta	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
	freshwater wetland	characteristics
Tf.		apply to your watland, or you have more than 2 UCM classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 	3
	• Unit is a "flat" depression (0.7 on key), or in the Flats class, with permanent surface	5
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	_
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of areapoints = 5 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 	I igui c
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	 ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	• Area seasonally ponded is $> 1/4$ total area of wetland points $= 2$	0
	• Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	8
D 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44
02	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see <i>p</i> . +
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	A 1.0 10
	Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Multiplie
	Other	X1
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	8
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit 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 3.1 Characteristics of surface water flows out of the wetland unit	
	 Unit is a depression with no surface water leaving it (no outlet)points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 	
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5	0
	• Marks are at least 0.5 ft, to < 2 ft, from surface or bottom of outlet	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 	
	D 3.3 Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream</i>	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unitpoints = 5 The area of the basin is 10 to 100 times the area of the unitpoints = 3 	5
		1
	 The area of the basin is note than 100 times the area of the unit	

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity,	(see p. 49)		
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>			
	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>			
	Wetland is in a headwater of a river or stream that has flooding problems.			
	Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or			
	stream that has flooding problems Other			
	YES multiplier is 2 NO multiplier is 1			
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	9		

The	se questi	ons apply to wetlands of all HGM classes.		Points
	HABIT	TAT FUNCTIONS – Indicators that wetland functions to provide impo	rtant habitat.	(only 1 score per box)
H 1	Does t	he wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardii 1/4 acre or more than 10% of the area if unit is smaller than 2.5 across Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)		Figure
		If the unit has a forested class check if:	arubs, herbaceous, moss/ground- ap of Cowardin vegetation classes 3 structures points = 2 1 structure	0
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the w cover more than 10% of the wetland or 1/4 acre to count (see text for	r descriptions of hydroperiods).	Figure
		Seasonally flooded or inundated 3 or Occasionally flooded or inundated 2 ty	more types present points = 3 more types presentpoints = 2 pes presentpoints = 1 pe presentpoints = 0 and Map of hydroperiods	0
	H 1.3	<u>5 – 19</u>		1
	H 1.4	Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Coward the classes and unvegetated areas (can include open water or mudflats) is None = 0 points $Low = 1$ point $Moderate = 2$ points		Figure
	(High = 3 points	Use map of Cowardin classes.	0
	H 1.5	Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number you put into the next column.	eter and 6 ft. long) and hanging vegetation extends at least unit, for at least 33 ft. (10m) er or muskrat for denning ent (<i>cut shrubs or trees that have</i> dy branches are present in areas that <i>ying by amphibians</i>) a stratum of plants <i>ge 78 is an error.</i>	0
	1	H 1 TOTAL Score – potential for providing habitat	Add the points in the column above	1

Wetland name or number 22E

2 Does	Does the wetland have the <u>opportunity</u> to provide habitat for many species?			
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference	5 4 4 3 3 1 2 2 1 0 1		
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects the estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	at 1 1 to		

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	5
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in</i>	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are $> 2 \text{ m}$ (6.5 ft) in height. Priority logs are $> 30 \text{ cm}$ (12 in) in diameter at the largest	
end, and $> 6 \text{ m} (20 \text{ ft}) \log.$	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
 There are at least 3 other wetlands within 1/2 mile, and the connections between them are 	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other development	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	
 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	3
• There are at least 5 other wethinds within 1/2 line, BOT the connections between them are disturbed	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within $1/2$ milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	1
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	9
Commonts:	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

wei						
SC4	Forested Wetlands (see p. 90)					
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	C-4 I				
	less than that found in old-growth. YES = Category I NO = X not a forested wetland with special characteristics	Cat. I				
~ ~ ~						
SC5	<u>Wetlands in Coastal Lagoons</u> (see p. 91)					
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the</i>					
	bottom.)					
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.					
	The wetland is larger than 1/10 acre (4350 square ft.)					
	$\mathbf{YES} = \mathbf{C} ategory I \qquad \mathbf{NO} = \mathbf{C} ategory II$	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 					
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	YES = Category II NO = go to SC 6.2	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

Wetland name or number 23A

		WETLAND RA Version 2 – Updated J Updated Oct. 20	uly 2006 to ir	ncrease accurac		lity among users		
Name of	wetland (if known): <u>23A</u>				Date of site	e visit: <u>10-2</u>	5-13
Rated by:	: <u>Colin W</u>	orsley / Matt Maynard Tra	ined by Eco	ology? Yes	<u>X</u> No	Date of trainin	ng: <u>11-2005 / (</u>	04-2006
SEC:	06	TOWNSHIP: 24N	RANG	E: 06E	Is S/T/R in	Appendix D? Y	es N	No X
		Map of wetland unit:						
			SUMM	ARY OF RA	TING			
Category	y based o	n FUNCTIONS provided b	y wetland:	I	II	III	IV	X
	Cata	acer I - Score > 70		Soono for	Watan Quality	Eurotiona	1.4	
		egory I = Score > 70			Water Quality		14	
		gory II = Score $51 - 69$			for Hydrologic	-	7	
	Categ	ory III = Score $30 - 50$		Sc	ore for Habitat	Functions	7	
	Categ	ory IV = $Score < 30$		ТО	TAL Score for	Functions	28	
Category	based on	SPECIAL CHARACTERIS	STICS of W	etland I	II_	Does	s not apply	X
		Final Catag	OWV (.l			1	IV	
		Final Categ	UI y (choo	se the highe	est category fro	om above)		
	_	Summary of basic i						
		Wetland Unit has Specia Characteristics	1		and HGM Clas ed for Rating	s		
	- 1	Estuarine		Depressi	<u> </u>	X		
		Natural Heritage Wetland		Riverine				
		Bog		Lake-fri	nge			
		Mature Forest		Slope		(x)		
		Old Growth Forest		Flats				
		Coastal Lagoon		Freshwat	ter Tidal			
		Interdunal						
		None of the above	x		unit has multipl	e X		
	L	None of the above	Λ	HGM cla	sses present	Χ		
		being rated meet any of th wetland according to the re						ou will
	(Check List for Wetlands (in addition to the protect					YES	NO
En	dangered	land unit been documented a animal or plant species (T/ poses of this rating system, "	'E species)?)				Х

 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or
 X

 Endangered animal species? For the purposes of this rating system, "documented" means the
 X

 wetland is on the appropriate state database. Note: Wetlands with State listed plant species
 X

 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 X

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the
 X

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 in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

		······································
	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	y tides (i.e. except during floods)?
	NO – go to 2 YES – the wetland class is Ti	
	If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine) e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		Estuarine wetlands were categorized separately in the earlier editions, and
		sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	nd II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is only sou	arce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	wetland class is Flats
	NO – go to 3 YES – The If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
5.		nores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	than 6.6 (2 m)?
	NO – go to 4 YES – The	wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very)	
	flow subsurface, as sheetflow, or in a swale w	lirection (unidirectional) and usually comes from seeps. It may
	The water leaves the wetland without being	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
	$\frac{NO - go \text{ to } 5}{YES} - The$	wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		re it gets inundated by overbank flooding from that stream or
	river. The overbank flooding occurs at least once ev	very two years
		sions that are filled with water when the river is not flooding.
		wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in w	hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the	
	NO – go to 7 YES – Th	e wetland class is Depressional
7.		vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – Th	e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
0.	slope may grade into a riverine floodplain, or a small stream within	
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repre-	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine Slope + Depressional	Riverine Depressional
	Slope + 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	Treat as ESTUARINE under wetlands with special
* 6	freshwater wetland	characteristics
		apply to your wetland, or you have more than 2 HGM classes
W1t	hin a wetland boundary, classify the wetland as Depression	ai for the rating.

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38
	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.50)
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	2
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YESpoints = 4NOpoints = 0D 1.3Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	 Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3	
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	 <i>ponded. Estimate area as the average condition 5 out of 10 years.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	• Area seasonally ponded is $> 1/4$ total area of wetland points $= 2$	0
	• Area seasonally ponded is $< 1/4$ total area of wetland	0
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplie
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Multiplie
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit 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 3.1 Characteristics of surface water flows out of the wetland unit	
	• Unit is a depression with no surface water leaving it (no outlet) points = 4	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	2
	• Onit is a That depression (Q.7 on key) of in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For</i>	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft. D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit	0
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland	0

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>	(see p. 49)
	 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	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	7

Thes	These questions apply to wetlands of all HGM classes.			
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.			(only 1 score per box)
H 1	Does t	ne wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardi, 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acresting Aquatic Bed Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)		Figure
		<i>If the unit has a forested class check if:</i> The forested class has 3 out of 5 strata (canopy, sub-canopy, sh cover) that each cover 20% within the forested polygon.	rubs, herbaceous, moss/ground- p of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0	0
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the w	vatland The water regime has to	Figure
		cover more than 10% of the wetland or 1/4 acre to count (see text for X Permanently flooded or inundated 4 or Seasonally flooded or inundated 3 or Occasionally flooded or inundated 2 typ X Saturated only 1 typ Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	<i>descriptions of hydroperiods).</i> more types present points = 3 more types presentpoints = 2 pes presentpoints = 1 pe presentpoints = 0 and	1
	H 1.3	Freshwater tidal wetland = 2 points <u>Richness of Plant Species (see p. 75)</u> :	Map of hydroperiods	
		Count the number of plant species in the wetland that cover at least 1species can be combined to meet the size threshold)You do not have to name the species. Do not include Eurasian Milforloosestrife, Canadian Thistle.If you counted: > 19 sp $5 - 19$		1
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Coward the classes and unvegetated areas (can include open water or mudflats) is		Figure
	(None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points (riparian braided channels]	Use map of Cowardin classes.	0
	H 1.5	Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number you put into the next column.	eter and 6 ft. long) nd hanging vegetation extends at least unit, for at least 33 ft. (10m) r or muskrat for denning ent (<i>cut shrubs or trees that have</i> ly branches are present in areas that <i>ving by amphibians</i>) stratum of plants ge 78 is an error.	0
		H 1 TOTAL Score – potential for providing habitat	Add the points in the column above	2

Wetland name or number 23A

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference	5 4 4 3 3 1 2 2 1 0 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? 	n at n 1 to

TOTAL for H 1 from page 8	2
H_{2} TOTAL SCOLE – ODOLUMILY TO DIOVIDING NADILAL Add the scores from H_{2} ,	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
 There is at least 1 wethind within 1/2 mile	
 within 1/2 milepoints = 3 There is at least 1 wetland within 1/2 milepoints = 2 	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within $1/2$ mile	
disturbedpoints = 3	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
wetlands within 1/2 milepoints = 5	_
 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe 	
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	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)
addressed in question H 2.4)	
If wetland has 1 priority habitat = 1 point Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
If we than $has 2$ priority habitats = 3 points	
If wetland has 3 or more priority habitats = 4 points	
end, and $> 6 \text{ m}$ (20 ft) long.	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
rock, ice, or other geological formations and is large enough to contain a human.	
<i>WDFW report: pp. 167-169 and glossary in Appendix A).</i> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in</i>	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
provide functional life history requirements for instream fish and wildlife resources.	
Instream: The combination of physical, biological, and chemical processes and conditions that interact to	Ĭ
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	0
terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non forested plant communities that can either take the form of a dry prairie or	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
oak component is important (full descriptions in WDFW PHS report p. 158).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
generally 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.	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).	
 Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i>	
http://wdfw.wa.gov/hab/phslist.htm)	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NOX	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
~ ~ ~ ~	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	YES = Category INO= Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
200	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	C (H
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II
	SC 0.2 is the wetand between 0.1 and 1 acte, of is it in a mosaic of wetands that is between 0.1 and 1 acte? YES = Category III	Cat III
	Category of wetland based on Special Characteristics	Cat. III
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NI A
	in you answered ino for an types enter inot Applicable on p. 1	NA

Wetland name or number 23B

	Version 2 – Updated J	uly 2006 to ind	RM – WESTERN WASHIN crease accuracy and reproducibility an ew WDFW definitions for priority habi	nong users		
Name of we	tland (if known): 23B			_ Date of sit	te visit: <u>09-</u>	20-13
Rated by:	Colin Worsley / Matt Maynard	Trained by	Ecology? Yes <u>X</u> No I	Date of trainin	ng: <u>11-2005 / </u>	04-2006
SEC: 0	6 TWNSHP: 24N	RNGE:	06E Is S/T/R in App	endix D? Ye	s N	o <u>X</u>
	Map of wetland unit:	Figure	Estimated size <u>0</u> .	05 acre	_	
		STIMMA	ARY OF RATING			
Category b	ased on FUNCTIONS provided b			ш х	X IV	
		y wettand.	· n	_ 1112	<u> </u>	
	Category I = Score > 70		Score for Water Quality Funct	tions	20	
	Category II = Score 51 - 69		Score for Hydrologic Funct	tions	4	
	Category III = Score 30 – 50		Score for Habitat Funct	tions	10	
	Category IV = Score < 30		TOTAL Score for Funct	tions	34	7
Category ba	sed on SPECIAL CHARACTERIS	STCS of We	tland I II	Does	not apply <u>X</u>	
	Final Categ	Orv (choos	e the "highest" category from ab	ove")	III	٦
		•		,0,0,0		
	·		about the wetland unit.			
	Wetland Unit has Specia Characteristics	1	Wetland HGM Class used for Rating			
	Estuarine		Depressional			
	Natural Heritage Wetland		Riverine			
	Bog		Lake-fringe	X		
	Mature Forest		Slope	(x)		
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal			-		
	None of the above	Х	Check if unit has multiple HGM classes present	Х		
	etland being rated meet any of th ect the wetland according to the re-					ou will
	Check List for Wetlands				YES	NO
	(in addition to the protect					
	he wetland unit been documented a	•	for any Federally listed Threater	ned or		
For th	<i>ngered animal or plant species (T/</i> ne purposes of this rating system, " or federal database.		" means the wetland is on the ap	propriate		Х
	he wetland unit been documented a	ns habitat fo	r any State listed Threatened or			
Enda	<i>ngered animal species?</i> For the pund is on the appropriate state databased	urposes of th	is rating system, "documented"			Х

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form - Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 8

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

Х

Х

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state? SP4. Does the wetland unit have a local significance in addition to its functions? For example, the

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	NO - go to 2 $YES - the wetland class is The$	
	If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call estu	arine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and
	note, however, that the characteristics that define Category I a	istency between editions, the term "Estuarine" wetland is kept. Please
2.	The entire wetland unit is flat and precipitation is only sou	
2.	runoff are NOT sources of water to the unit.	ree (>>0%) of water to it. Oroundwater and surface water
	$\frac{NO - go \text{ to } 3}{YES} - The x$	vetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	use the form for Depressional wetlands.
3.	Does the entire wetland meet both of the following criteria	
	<u>X</u> The vegetated part of the wetland is on the sh vegetation on the surface) where at least 20 a	ores of a body of permanent open water (without any
	<u>X</u> At least 30% of the open water area is deeper	
		vetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very a	
		irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w The water leaves the wetland without being i	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
	NO - go to 5 YES – The v	vetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
	river.	re it gets inundated by overbank flooding from that stream or
	The overbank flooding occurs at least once ev	verv two years.
	NOTE: The riverine unit can contain depress	sions that are filled with water when the river is not flooding
		vetland class is Riverine
6.		nich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher th NO – go to 7 YES – The	an the interior of the wetland. e wetland class is Depressional
7		vious depression and no overbank flooding. The unit does not
7.	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet.	
	No – go to 8 YES – The	e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repres	sents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional
	Depressional + Kiverine along stream within boundary Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
	freshwater wetland	characteristics
If y	you are unable still to determine which of the above criteria	apply to your wetland, or you have more than 2 HGM classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

L	Lake-fringe Wetlands	Points	
	WATER QUALITY FUNCTIONS – Indicators that the wetland unit functions to improve water quality.	(only 1 score	
L 1	Does the wetland unit have the <u>potential</u> to improve water quality? (see p.59)	per box)	
	L 1.1 Average width of vegetation along the lakeshore (use polygons of Cowardin classes):	Figure	
	 Vegetation is more than 33 ft. (10m) wide points = 6 Vegetation is more than 16 ft.(5m) wide and < 33 ft points = 3 	Figure	
	• Vegetation is more than 6 ft. (2m) wide and < 16 ft points = 1	6	
	• Vegetation is less than 6 ft. widepoints = 0 Map of Cowardin classes with widths marked		
	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. The herbaceous plants can be either the	Figure	
	dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is		
	 total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Cover of herbaceous plants is > 90% of the vegetated area		
	 Cover of herbaceous plants is > 2/3 of the vegetated area	4	
	• Cover of herbaceous plants is $> 1/3$ of the vegetated area	+	
	 Other vegetation that is not aquatic bed or herbaceous covers > 2/3 of the unit points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 		
	• Aquatic bed cover and open water > $2/3$ of the unit		
	Map with polygons of different vegetation types		
	Add the points in the boxes above	10	
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 polluted surface water flowing		
	through the unit to the lake. Note which of the following conditions provide the sources of pollutants. A unit		
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards		
	Grazing in the wetland or within 150 ft		
	Polluted water discharges to wetland along upland edge		
	Tilled fields or orchards within 150 ft. of wetland X 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)	Multiplier	
	\underline{X} Power boats with gasoline or diesel engines use the lake Other		
	YES multiplier is 2 NO multiplier is 1		
•	TOTAL – Water Quality Functions Multiply the score from L1 by L2; then <i>add score to table on p. 1</i>	20	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.		
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.62)	
	L 3 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>):	/	
	(choose the highest scoring description that matches conditions in the wetland)	Figure	
	 3/4 of distance is shrubs or forest at least 33 ft. (10m) wide points = 6 3/4 of distance is shrubs or forest at least 6 ft. (2m) wide points = 4 		
	 5/4 of distance is shrubs of forest at least 3 ft. (200) wide	2	
	• Vegetation is at least 6 ft. (2m) wide (any type except aquatic bed) points = 2	2	
	• Vegetation is less than 6 ft. (2m) wide (any type except aquatic bed) points = 0 Aerial photo or map with Cowardin vegetation classes		
	Record the points in the boxes above	2	
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 64)	
1. 4	Are there features along the shore that will be impacted if the shoreline erodes? <i>Note which of the following</i>	(See p. 07)	
	conditions apply.		
	\underline{X} 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,	Multiplier	
	other wetlands) that can be damaged by shoreline erosion.	×	
	Other	X2	
	YES multiplier is 2 NO multiplier is 1		
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from L3 by L4; then <i>add score to table on p. 1</i>	4	

Comments: Deck, shed, and walkways in wetland.

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the potential to provide habitat for many species?	
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed The proceed plants	Figure
	X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-	1
	cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have:4 structures or more points = 42 structures	
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure
	 Permanently flooded or inundated Seasonally flooded or inundated Occasionally 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 X Lake-fringe wetland = 2 points 	2
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	None = 0 points $Low = 1$ point $Moderate = 2$ points $Low = 1$ point $Moderate = 2$ points $Note:$ If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes.	. 1
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points	7
	 you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. 	0
	H 1 TOTAL Score – potential for providing habitatAdd the points in the column above	5

Wetland name or number 23B

[2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box)
H 2.1	Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 5 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. >00m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference. points = 3 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = 3 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = 3 Ibuffer does not meet any of the criteria above: No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > <	1
H 2.2	Arial photo showing buffers 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point	t D

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
-	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
	 determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, 	Dual Rating I/II
	or contiguous freshwater wetlands. Natural Heritage Wetlands (see p. 87)	
SC2	Natural Heritage wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	<i>question is used to screen out most sites before you need to contact WNHP/DNR.)</i> S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	Bogs (see p. 87)	
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function.	
	 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat I
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Is not a bog for purpose of rating}$	Cat. I

SC4	Forested Wetlands (see p. 90)					
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland</i>					
	based on its function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I NO = X not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)	Cal. I				
	$\mathbf{YES} = Category I \qquad \mathbf{NO} = Category II$	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 					
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$YES = Category II \qquad NO = go to SC 6.2$	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
]	Category of wetland based on Special Characteristics					
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

Wetland name or number 23C

		WETLAND RA Version 2 – Updated Updated Oct. 2	July 2006 to inc	rease accurac		y among users	i	
Name of	wetland (i	if known): 23C				Date of	site visit: 0	9-20-13
Rated by	: <u>Colin W</u>	orsley / Matt Maynard Tra	ined by Ecol	ogy? Yes	<u>X</u> No	Date of trai	ining: <u>11-200</u> :	5 / 04-2006
SEC:	06	TOWNSHIP: 24N	RANGE	: <u>06E</u>	Is S/T/R in A	Appendix D?	Yes	NoX
		Map of wetland unit:	Figure		_ Estimated size	e <u>0.08 acre</u>		
			SUMMA	RY OF RA	TING			
Category	y based or	n FUNCTIONS provided	by wetland:	I	II	III	<u> </u>	V
	Cate	gory I = Score > 70		Score for	Water Quality F	unctions	10	
	Categ	gory II = Score 51 - 69		Score	for Hydrologic F	unctions	14	
	Catego	ory III = Score $30 - 50$		Sc	ore for Habitat F	unctions	14	
	Catego	ory IV = Score < 30		ТО	TAL Score for F	unctions	38	
Category	y based on	SPECIAL CHARACTERI	STICS of We	etland I_	II	D	oes not apply	yX
		Final Categ	gory (choose	e the "highe	est" category fror	n above")	III	
		Summary of basic	information	about the	wetland unit.			B
		Wetland Unit has Specia Characteristics	al		and HGM Class ed for Rating			
		Estuarine		Depressi	onal	X		
		Natural Heritage Wetland	1	Riverine				
		Bog Mature Forest		Lake-fri Slope	nge			
		Old Growth Forest		Flats				
		Coastal Lagoon			ter Tidal			
		Interdunal						
		None of the above	X		unit has multiple sses present			
		being rated meet any of the wetland according to the re						
		Check List for Wetlands (in addition to the protec					YES	NO
	as the wetl	land unit been documented animal or plant species (T	as a habitat f			atened or		X

For the purposes of this rating system, "documented" means the wetland is on the appropriate
state or federal database.SP2. Has the wetland unit been documented as habitat for any State listed Threatened or
Endangered animal species? For the purposes of this rating system, "documented" means the
wetland is on the appropriate state database. Note: Wetlands with State listed plant species

 are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 Image: SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 Image: X

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.
 Image: X

Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

-		
	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	NO – go to 2 YES – the wetland class is Tie If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe	e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	
		wetland class is Flats
2	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria The vegetated part of the wetland is on the sh	ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	than 6.6 (2 m)?
	NO – go to 4 YES – The v	wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very a	gradual). irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being i	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
5.	Does the entire wetland meet all of the following criteria?	wetland class is Slope
5.		e it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once ev	
		sions that are filled with water when the river is not flooding
6.		wetland class is Riverine nich water ponds, or is saturated to the surface, at some time of
0.	the year. This means that any outlet, if present is higher th	
		e wetland class is Depressional
7.	Is the entire wetland located in a very flat area with no obv	vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	
	wetland may be ditched, but has no obvious natural outlet.	
0		e wetland class is Depressional
8.	Your wetland unit seems to be difficult to classify and probably con- slope may grade into a riverine floodplain, or a small stream within	ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides. GO
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		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 v than 10% of the unit, classify the wetland using the class that repres	wetland unit being rated. If the area of the class listed in column 2 is less
	HGM Classes within the wetland unit being rated Slope + Riverine	HGM Class to Use in Rating 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 ۲		apply to your wetland, or you have more than 2 HGM classes
,	t's southed have dealed if the other of the boote entering	-1 for the set of the

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
1	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.50)
	 Unit is a depression with no surface water leaving it (no outlet) points = 3 	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	2
	• Onit is a 'flat' depression (Q.7 on Key), of in the Plats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YESpoints = 4NOpoints = 0D 1.3Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	
	 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	3
	• wettand has persistent, ungrazed vegetation < 1/10 of area	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	 ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	• Area seasonally ponded is > 1/4 total area of wetland points = 2	0
	• Area seasonally ponded is $< 1/4$ total area of wetland points = 0	0
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplie
	X Residential, urban areas, golf courses are within 150 ft. of wetland	
	Wetland is fed by groundwater high in phosphorus or nitrogen	
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	<u>X2</u>
		-
•	Other	X2
•	Other YES multiplier is 2 NO multiplier is 1	<u>X2</u>
◆ D 3	Other YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	<u>X2</u> 10
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	<u>X2</u> 10
• D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 10 (see p.46)
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	<u>X2</u> 10 (see p.46)
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 10 (see p.46)
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 10 (see p.46)
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 10 (see p.46
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 10 (see p.46
• D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 10 (see p.46) 2
• D 3	VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	<u>X2</u> 10 (see p.46) 2
• D 3	VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 10 (see p.46) 2
• D 3	Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 5 • Marks of ponding between 2 ft. to < 2 ft. from surface or bottom of outlet	<u>X2</u> 10 (see p.46) 2
• D 3	Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 10 (see p.46) 2
◆ D 3	Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 10 (see p.46) 2
• D 3	Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 10 (see p.46) 2 0
• D 3	Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet). points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch. points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet.	<u>X2</u> 10 (see p.46) 2
◆ D 3	Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 10 (see p.46) 2 0

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of amount with any busiless of amount were used as flood groups and the state of a structure such as flood groups and the state of amount with a structure such as flood groups.</i>	
	 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	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	14

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each cla 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)	ss is Figure
	If the unit has a forested class check if:	sses = 2
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	
	X Permanently flooded or inundated 4 or more types present points = Seasonally flooded or inundated 3 or more types present points = X Occasionally flooded or inundated 2 types present points = X Saturated only 1 type present points = Y Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Y Lake-fringe wetland = 2 points Map of hydroperi	= 3 = 2 = 1 = 0 2
	H 1.3 <u>Richness of Plant Species</u> (<i>see p. 75</i>):	
	If it is a second reaction of the interpreter i	1
	H 1.4 Interspersion of Habitats (<i>see p.</i> 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1) the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	, or
	None = 0 points Low = 1 point Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	
	Use map of Cowardin cla High = 3 points [riparian braided channels]	isses. 1
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of p	oints
	you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that hav not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	1 ve
	H 1 TOTAL Score – potential for providing habitat Add the points in the column ab	ove 6

Wetland name or number 23C

[2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 5	5 4 4 3 3 1 2 2 1 0
H 2.2	 <u>Corridors and Connections (see p. 81)</u> H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects the estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR 	at to 1

 H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phSiist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Badis: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh, crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white OA: Woodlands Stands of pure oak or oak/confire associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial cosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life hist	3
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 No habitats $= 0$ points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in guestion $H(2, 4)$	
addressed in question H 2.4)	
 H 2.4 <u>Wetland Landscape</u>: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 	2
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	6
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	14
Add the points for 11 1 and 11 2, then record the result on p. 1	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Rating I/II
SC2	Natural Heritage Wetlands (see p. 87)Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NOX	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	~
	$YES = Category I \qquad NO = Category II$	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WPLO)?	
	WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	YES = Go to SC 6.1 NO <u>A</u> not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II NO = go to SC 6.2	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number 24A

	Version 2	2 – Updated July	2006 to inc	crease accuracy	TERN WASHI and reproducibility a nitions for priority ha	mong users		
Name of v	wetland (if known): 24	4A				Date of sit	e visit: <u>09-2</u>	0-13
Rated by:	Colin Worsley / Matt Ma	<u>ynard</u> Traine	d by Ecol	logy?Yes	X No I	Date of traini	ng: <u>11-2005 / (</u>	04-2006
SEC:	06 TOWNSH	IP: <u>24N</u>	RANGE	E: 06E	Is S/T/R in Ap	pendix D?	Yes N	No <u>X</u>
	Map of wet	land unit: Fig	gure		Estimated size	0.60 acre		
			SUMMA	ARY OF RAT	TING			
Category	based on FUNCTIONS	provided by	wetland:	I	II	III	<u>x IV</u>	
	Category I = Score	> 70		Score for V	Vater Quality Fun	ctions	12	
	Category II = Score				or Hydrologic Fun	-	12	
	Category III = Score				re for Habitat Fun	-	18	
	Category IV = Score	< 30		ТОТ	AL Score for Fun	ctions	42	7
Category	based on SPECIAL CHA	RACTERIST	ICS of Wo	etland I	II	Do	es not apply	X
	Fina	al Categor	Y (choos	se the "highes	t" category from a	above")	III	
	Summai	y of basic inf	ormation	about the w	etland unit.			
	Wetland Unit Characte	has Special		Wetla	nd HGM Class I for Rating			
	Estuarine			Depression		X		
	Natural Heritag	ge Wetland		Riverine		(x)		
	Bog			Lake-fring	ge			
	Mature Forest			Slope				
	Old Growth Fo			Flats				
	Coastal Lagoon	l		Freshwate	r Tidal			
	Interdunal None of the abo	ve	X	Check if un HGM class	nit has multiple	Х		
	wetland being rated mea			elow? If you	answer YES to a			ou will
	Check List for (in addition to	Wetlands th	at Need	Additional	Protection		YES	NO
End For	s the wetland unit been de dangered animal or plant the purposes of this ratin te or federal database.	ocumented as a species (T/E s	a habitat f species)?	for any Feder	ally listed Threat			Х

SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	drologic criteria listed in each question do not apply to HGM classes. In this case, identify which hydrologic	the entire unit being rated, you probably have a unit with criteria in questions 1-7 apply, and go to Question 8.
	the water levels in the entire unit usually controlled by - go to 2 YES – the wetland class is Tid If yes, is the salinity of the water during periods of ann	lal Fringe ual low flow below 0.5 ppt (parts per thousand)?
	<i>is rated as an Estuarine wetland.</i> Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Est	NO – Saltwater Tidal Fringe (Estuarine) use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please ad II estuarine wetlands have changed (see p.).
2. The	× · ·	cce (>90%) of water to it. Groundwater and surface water
	off are NOT sources of water to the unit.	ce (>90%) of water to it. Groundwater and surface water
		vetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	use the form for Depressional wetlands.
3. Doe	es the entire wetland meet both of the following criteria	
		pres of a body of permanent open water (without any
	vegetation on the surface) where at least 20 ac	
	At least 30% of the open water area is deeper NO – go to 4 YES – The w	than 6.6 (2 m)? vetland class is Lake-fringe (Lacustrine Fringe)
4 Dec	es the entire wetland meet all of the following criteria?	(Lacusti nie Fringe)
4. Doe	The wetland is on a slope (slope can be very g	aradual)
		rection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being in	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep). Vetland class is Slope
5 Dec	es the entire wetland meet all of the following criteria?	interest is stope
J. D06		e it gets inundated by overbank flooding from that stream or
	river.	on gets mundated by oversame mounting nom that stream of
	The overbank flooding occurs at least once ev	ery two years.
		ions that are filled with water when the river is not flooding
		vetland class is Riverine
		ich water ponds, or is saturated to the surface, at some time of
the	year. This means that any outlet, if present is higher the NO – go to 7 YES – The	e wetland class is Depressional
7 In th		ious depression and no overbank flooding. The unit does not
		s to be maintained by high groundwater in the area. The
	land may be ditched, but has no obvious natural outlet.	, , , , , , , , , , , , , , , , , , ,
	<mark>No – go to 8</mark> YES – The	e wetland class is Depressional
		tains several different HGM classes. For example, seeps at the base of a
		a depressional wetland has a zone of flooding along its sides. GO
		IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		retland unit being rated. If the area of the class listed in column 2 is less
than	10% of the unit, classify the wetland using the class that represent	ents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slo	ope + Riverine	Riverine
	ope + Depressional	Depressional
	ope + Lake-fringe	Lake-fringe
	epressional + Riverine along stream within boundary	Depressional
	epressional + Lake-fringe It Water Tidal Fringe and any other class of	Depressional Treat as ESTUARINE under wetlands with special
	eshwater wetland	characteristics
		upply to your wetland, or you have more than 2 HGM classes
	wetland boundary, classify the wetland as Depressiona	
W7 (1 1 1		

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

		(only 1 scor
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	per box)
) 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 	
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (0.7 on key), or in the Flats class, with permanent surface 	1
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation > = 95% of areapoints = 5 	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	 Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	(see p. 44
	 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 	Multiplier
	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	12
•	TOTAL – Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	12
) 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 	0
	 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	 D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 	3

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems.	
	X 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	Multiplier
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	12

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure
	$\frac{\dot{X}}{cover}$ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground- cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 4 structure points = 0 4 structure points = 0	4
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure
	Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 X Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 0 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 Map of hydroperiods	2
	H 1.3 <u>Richness of Plant Species (see p. 75)</u> :	
	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:	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes	2
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of point	c
	 Check the habital perturbes that are present in the wethand. The number of checks is the number of point you put into the next column. Large, downed, woody debris within the wetland (> 4 in. 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 (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. 	1
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	10

Wetland name or number 24A

2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed"	5 4 4 3 3 1 2 2 1 0 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 ripariar or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	n at n 1 to

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.	
 Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old_growth/Mature forests: (Old-growth west of Cascade crest) stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years of west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). 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. Westside Prairies: Herbaccous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 th) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ran	3
addressed in question H 2.4)	
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
 There is at least 1 wetland within 1/2 milepoints = 2 	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	10
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	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 – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
5C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species	Cat. I
	that cover more than 10% cover of hon-native splant species. If the hon-native splant approximates species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NOX	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

wei					
SC4	Forested Wetlands (see p. 90)				
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
~	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)				
	YES = Category I NO = Category II	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 				
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	YES = Category II NO = go to SC 6.2	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
1	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

Wetland name or number 24B

	Version 2 – Updated Ju	ıly 2006 to ir	RM – WESTERN WASHIN acrease accuracy and reproducibility a ew WDFW definitions for priority had	mong users		
Name of w	etland (if known): 24B			Date of site	visit: 09-2	5-13
Rated by: <u>(</u>	Colin Worsley / Matt Maynard Trai	ned by Eco	ology? Yes <u>X</u> No D	ate of trainin	g: <u>11-2005 / (</u>)4-2006
SEC:	06 TOWNSHIP: 24N	RANG	E: <u>06E</u> Is S/T/R in App	endix D? Ye	es N	√o <u>X</u>
	Map of wetland unit:	Figure	Estimated size 1	.75 acre	_	
		SUMM	ARY OF RATING			
Category I	based on FUNCTIONS provided by	y wetland:	I II	_ III <u></u>	IV	
	Category I = Score > 70		Score for Water Quality Fund	ctions	12	7
	Category II = Score 51 - 69		Score for Hydrologic Fund	ctions	12	7
	Category III = Score $30 - 50$		Score for Habitat Fund	ctions	19	1
	Category IV = Score < 30		TOTAL Score for Fund	ctions	43	1
Category b	ased on SPECIAL CHARACTERIS	STICS of W	/etland I II	Does	not apply	X
			se the "highest" category from a		III	<u></u>
		•				
	Wetland Unit has Special Characteristics		n about the wetland unit. Wetland HGM Class used for Rating			
	Estuarine		Depressional	X		
	Natural Heritage Wetland Bog		Riverine Lake-fringe	(x)		
	Mature Forest		Slope			
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	X	Check if unit has multiple HGM classes present	Х		
	vetland being rated meet any of the otect the wetland according to the reg	gulations re	garding the special characteristi			ou will
	Check List for Wetlands (in addition to the protecti				YES	NO
SP1 Has	the wetland unit been documented a	s a habitat	for any Federally listed Threate	ned or		Х

SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species

 are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 X

 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 X

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.
 X

Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	tides (i.e. except during floods)?
	NO – go to 2 YES – the wetland class is Tie	
	If yes, is the salinity of the water during periods of and	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		narine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and
		istency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I ar	
2.	The entire wetland unit is flat and precipitation is only sou	
2.	runoff are NOT sources of water to the unit.	
		vetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	use the form for Depressional wetlands.
3.	Does the entire wetland meet both of the following criteria	?
		ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 ac	
	At least 30% of the open water area is deeper	
		vetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (<i>slope can be very</i> g	
	flow subsurface, as sheetflow, or in a swale w	irection (unidirectional) and usually comes from seeps. It may
	The water leaves the wetland without being i	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		vetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		e it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once ev	
		ions that are filled with water when the river is not flooding
_		vetland class is Riverine
6.		hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the NO $rate 7$ VES . The	
_		e wetland class is Depressional
7.		ious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet.	s to be maintained by high groundwater in the area. The
		e wetland class is Depressional
8.		tains several different HGM classes. For example, seeps at the base of a
о.	slope may grade into a riverine floodplain, or a small stream within	
		JIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repres	ents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
TC.	freshwater wetland	characteristics
	hin a wetland boundary, classify the wetland as Depression	apply to your wetland, or you have more than 2 HGM classes
wit	init a wettand boundary, classify the wettand as Depression	ai for me rating.

Wetland Rating Form - Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 sco per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 	Figure
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing 	1
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes 	5
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	 Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 Map of Hydroperiods 	0
	Total for D 1 Add the points in the boxes above	6
D 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or or orberde within 150 ft	(see p. 44
	 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 	Multiplio
•	YES multiplier is 2 NO multiplier is 1	10
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	12
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	 Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	(see p.40
	 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	 D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit points = 5 	3

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

Thes	se questions apply to wetlands of all HGM classes.	Points		
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.			
H 1				
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by Cowardin) – Size threshold for each classes present (as defined by C	<i>ass is</i> Figure		
	X_{-} Setup/shift(a) (areas where shift(b) shift(b) (areas where trees have > 30% cover) \overline{X}_{-} Forested (areas where trees have > 30% cover) \overline{If} the unit has a forested class check if:	asses $s = 2$		
	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 Figure		
	cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods) X Permanently flooded or inundated 4 or more types present points Seasonally flooded or inundated 3 or more types present points X Occasionally flooded or inundated 2 types present points X Saturated only 1 type present points 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 March 10%	$= \frac{3}{2}$ = 1 = 0 3		
	Freshwater tidal wetland = 2 points Map of hydroper H 1.3 Richness of Plant Species (see p. 75):	ioas		
	H 1.5 <u>Ktenness 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 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:	2 1 2		
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1 the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points None = 0 points Low = 1 point Moderate = 2 points	lasses Figure		
	Use map of Cowardin cl High = 3 points High =	asses.		
	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 p you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland	least 2 we		
	H 1 TOTAL Score – potential for providing habitat Add the points in the column a	bove 10		

Wetland name or number 24B

2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	
H 2.2	 <u>Corridors and Connections (see p. 81)</u> H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects the estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR 	1 0

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dth ar_{2} 200 users of acre (Mature forests) Standa with success diameters are adding 52 cm (21 in) dth, around	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
a wet prairie (full descriptions in WDFW PHS report p. 161).	4
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in</i>	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
 Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
<u>X</u> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay	
characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > (20 i) is a single cavity excavation/use by wildlife.	
51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameters at the loggest and and > 6 m (20 ft) long	
diameter at the largest end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points	
If we thank has 2 priority habitats = 3 points	
If we than $has 2$ priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	9
TOTAL for H 1 from page 8	10
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	19
Commonte	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met. Estuarine wetlands? (see p.86)	
SC1	Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	$\underline{\qquad} \text{ With a salinity greater than 0.5 ppt.} \\ \textbf{YES} = \text{Go to SC 1.1} \qquad \textbf{NO} \ \underline{\qquad} X \\ \underline{\qquad}$	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	~ -
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
	determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?	Cat I
	YES = Category 1 NO not a Heritage Wetland Bogs (see p. 87)	
C3	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	wetland based on its function.	
	 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	 pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more 	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	 less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western benche also be deepele pine species. For leave and the species of the s	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)				
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its functionOld-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	C-4 I			
	less than that found in old-growth. $\mathbf{NO} = \mathbf{X}$ not a forested wetland with special characteristics	Cat. I			
a a -	YES = Category I $NO = X$ not a forested wetland with special characteristicsWetlands in Coastal Lagoons (see p. 91)				
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the</i>				
	bottom.)				
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)				
	YES = Category INO= Category II	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 				
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	YES = Category II NO = go to SC 6.2	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

Wetland name or number 24C

		WETLAND RA Version 2 – Updated J Updated Oct. 20	uly 2006 to incr	ease accuracy		y among users	5			
Name of wetland (if known): 24C Date of site								t: <u>09-2</u>	5-13	
Rated by:	: <u>Colin Wo</u>	orsley / Matt Maynard Tra	ined by Ecolo	ogy? Yes	X No	Date of tra	ining: <u>1</u>	<u>1-2005 / (</u>)4-2006	
SEC:	06	TOWNSHIP: 24N	RANGE:	06E	Is S/T/R in A	ppendix D	? Yes	1	No <u>X</u>	
		Map of wetland unit:	t: Figure		Estimated size 0.16 acre					
			SUMMA	RY OF RAT	TING					
Category	y based on	FUNCTIONS provided b	y wetland:	[II	III	X	IV		
	Categ	gory I = Score > 70		Score for Water Quality Functions				10		
	Categ	ory II = Score 51 - 69		Score for Hydrologic Functions				10		
	Catego	ory III = Score $30 - 50$		Score for Habitat Functions				14	_	
	Category IV = Score < 30			TOTAL Score for Functions					7	
C		SPECIAL CHARACTERIS		4	т			l	X	
	_	Final Categ Summary of basic i	information	about the w	etland unit.	1 above")		III		
		Wetland Unit has Specia Characteristics	l		nd HGM Class I for Rating					
	1	Estuarine		Depression		X				
	1	Natural Heritage Wetland		Riverine		(x)				
		Bog		Lake-fring	ge					
		Mature Forest		Slope						
		Old Growth Forest		Flats	T ' 1 1					
		Coastal Lagoon Interdunal		Freshwate	r 11dai					
		None of the above	X	Check if un HGM class	nit has multiple ses present	X				
		being rated meet any of th wetland according to the rej							ou will	
Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)								YES	NO	
		and unit been documented a		or any Feder	ally listed Three	atened or			X	

 Endangered animal or plant species (T/E species)?

 For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.

 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 X

 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 X

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program the Critical Areas Ordinance or
 X

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 in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

If the hudrologic oritoric listed in each question do not emply to	the entire unit being reted you probably have a unit with
If the hydrologic criteria listed in each question do not apply to multiple HGM classes. In this case, identify which hydrologic	
1. Are the water levels in the entire unit usually controlled by	y tides (i.e. except during floods)?
NO – go to 2 YES – the wetland class is Ti	
If yes, is the salinity of the water during periods of an	
YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
	e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	uarine in the first and second editions of the rating system are called Salt
	Estuarine wetlands were categorized separately in the earlier editions, and
note, however, that the characteristics that define Category I a	sistency between editions, the term "Estuarine" wetland is kept. Please
	arce (>90%) of water to it. Groundwater and surface water
runoff are NOT sources of water to the unit.	watland alass is Flats
NO – go to 3 YES – The If your wetland can be classified as a "Flats" wetland,	wetland class is Flats
3. Does the entire wetland meet both of the following criteria	
vegetation on the surface) where at least 20 a	nores of a body of permanent open water (without any
At least 30% of the open water area is deepen	
	wetland class is Lake-fringe (Lacustrine Fringe)
4. Does the entire wetland meet all of the following criteria?	(Change Change Tringe)
The wetland is on a slope (<i>slope can be very</i>	aradual)
	lirection (unidirectional) and usually comes from seeps. It may
flow subsurface, as sheetflow, or in a swale v	
The water leaves the wetland without being	
	e types of wetlands except occasionally in very small and
	pressions are usually <3 ft diameter and less than 1 foot deep).
NO – go to 5 YES – The	wetland class is Slope
5. Does the entire wetland meet all of the following criteria?	
The unit is in a valley or stream channel whe	re it gets inundated by overbank flooding from that stream or
river.	
The overbank flooding occurs at least once e	
	sions that are filled with water when the river is not flooding wetland class is Riverine
	hich water ponds, or is saturated to the surface, at some time of
the year. This means that any outlet, if present is higher the $NO - go$ to 7 $YES - Th$	e wetland class is Depressional
	-
7. Is the entire wetland located in a very flat area with no ob- pond surface water more than a few inches. The unit seen	
wetland may be ditched, but has no obvious natural outlet.	
	e wetland class is Depressional
	ntains several different HGM classes. For example, seeps at the base of a
	a depressional wetland has a zone of flooding along its sides. GO
	GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
	Use the following table to identify the appropriate class to use for the
	wetland. NOTE: Use this table only if the class that is recommended in
	wetland unit being rated. If the area of the class listed in column 2 is less
than 10% of the unit, classify the wetland using the class that repre	sents more than 90% of the total area.
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics
If you are unable still to determine which of the above criteria	
within a wetland boundary, classify the wetland as Depression	al for the rating.

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box)
D 1	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	г.
	• Wetland has persistent, ungrazed vegetation $> = 95\%$ of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 	3
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	6
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	<i>Least 2 months, but dries out sometime during the year. Do not count the area that is permanently</i>	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	 Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 	
	• Area seasonally ponded is $< 1/4$ total area of wetland points $= 0$	0
	Map of Hydroperiods	
	Total for D 1Add the points in the boxes above	
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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	1
	Other	<u>X2</u>
	YES multiplier is 2 NO multiplier is 1	10
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	10
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit 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 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 	
	 Unit is a depression with no surface water reaving it (no outer)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>)	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 	
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points $= 5$	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 	
	D 3.3 Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream</i>	1
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unitpoints = 5 The area of the basin is 10 to 100 times the area of the unitpoints = 3 	3
	• The area of the basin is more than 100 times the area of the unit \dots points = 0	
	• Entire unit is in the FLATS class	
	Total for D 3Add the points in the boxes above	

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive	
	flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>	
	indicators of opportunity apply.	
	Wetland is in a headwater of a river or stream that has flooding problems. X 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	Multiplier
	stream that has flooding problems Other	X2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	10

Thes	se quest	ions apply to wetlands of all HGM classes.	Points
	HABI	TAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1		he wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-	Figure
		cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have:Map of Cowardin vegetation classes4 structures or more points = 43 structures points = 22 structures points = 11 structure points = 0	2
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure
		Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 0 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 Points	2
	Н 1.3	Freshwater tidal wetland = 2 points Map of hydroperiods	
	11 1.5	Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species points = 2 5 - 19 species below if you want to: < 5 species points = 0	1
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
		None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	Figure
	(Use map of Cowardin classes.	1
	H 1.5	<u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.	
		 Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants <i>NOTE: The 20% stated in early printings of the manual on page 78 is an error</i>. 	0
		H 1 TOTAL Score – potential for providing habitat <i>Add the points in the column above</i>	6

Wetland name or number 24C

2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed undisturbed vegetated areas, rocky areas, or open water 50% circumference. points = 4 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% circumference. points = 4 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 25% circumference. points = 5 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 25% circumference. points = 5 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 25% circumference. points = 5 fourffer does not meet any of the criteria above: No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK. points = 2 No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK. points = 1 Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).	5 4 4 3 3 1 2 2 1 0 1
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	n at n 1 to

	H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
	http://wdfw.wa.gov/hab/phslist.htm)	
	Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
	NOTE: the connections do not have to be relatively undisturbed.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
	fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).	
	Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
	multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
	cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
	generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	oak component is important (full descriptions in WDFW PHS report p. 158).	
	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.	
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
	a wet prairie (full descriptions in WDFW PHS report p. 161).	3
	X Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
	provide functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in</i>	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
	western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest and and $x \in m$ (20 ft) large	
	end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points	
	If we hand has 2 priority habitats = 3 points	
	If we that has 1 priority habitat = 1 points No habitats = 0 points	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
	addressed in question H 2.4)	
	H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
	• There are at least 3 other wetlands within $1/2$ mile, and the connections between them are	
	relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
	but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 milepoints = 5	3
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	5
	disturbedpoints = 3	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within 1/2 milepoints = 3	
	• There is at least 1 wetland within 1/2 milepoints = 2	
	• There are no wetlands within 1/2 milepoints = 0	
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
	TOTAL for H 1 from page 8	6
♦	Total Score for Habitat FunctionsAdd the points for H 1 and H 2; then record the result on p. 1	14
Com		

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate</i>	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	a . T
	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 <i>Spartina</i> spp., are only species	Cat. I Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
C2	<u>Natural Heritage Wetlands</u> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?	Cat I
	YES = Category 1 NO not a Heritage Wetland	
C3	Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	wetland based on its function.	
	 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	 pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, 	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	 less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western herelock ladgerede ring, guarding agent for grant of the species of western white ring. WITH one of the species of t	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	~
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WDUO)2	
	WBUO)?	
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II NO = go to SC 6.2	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
1	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number 25A

		WETLAND RA Version 2 – Updated Updated Oct. 2	July 2006 to in	crease accurac		ty among users		
Name of	f wetland	(if known): 25A				Date of s	ite visit: <u>09-</u>	25-13
Rated by	y: <u>Colin V</u>	Worsley / Matt Maynard Tr	ained by Eco	logy? Yes	X No	Date of train	ning: <u>11-2005 /</u>	04-2006
SEC:	32	TOWNSHIP: 25N	RANG	E: <u>06E</u>	Is S/T/R in A	Appendix D?	Yes	No <u>X</u>
		Map of wetland unit:						
		_	CTIMINA		TINC			
Categor	y based	on FUNCTIONS provided		ARY OF RA		III	<u> </u>	
	Ca	terrer I Secret 70		Saana fan	Water Ovality F		20	
		tegory I = $\text{Score} > 70$			Water Quality F		20	
		egory II = Score $51 - 69$			for Hydrologic F		12	
		gory III = Score $30 - 50$			ore for Habitat F		14	
	Cate	gory IV = Score < 30		ТО	TAL Score for F	unctions	46	
Category	y based o	n SPECIAL CHARACTER	ISTICS of W	etland I	II	De	oes not apply_	X
		· · · · · · · · · · · · · · · · · · ·		-	est" category from	n above")	III	
		Summary of basic Wetland Unit has Speci Characteristics		Wetla	wetland unit. and HGM Class ed for Rating			
		Estuarine		Depressi	onal	X		
		Natural Heritage Wetlan	d	Riverine		(x)		
		Bog Mature Forest		Lake-frii Slope	ige			
		Old Growth Forest		Flats				
		Coastal Lagoon		Freshwat	ter Tidal			
		Interdunal		1 resitiva				
		None of the above	X		unit has multiple sses present	Х		
		d being rated meet any of t e wetland according to the r						you will
		Check List for Wetland (in addition to the protect					YES	NO
		etland unit been documented d animal or plant species (1	as a habitat	for any Fede		atened or		X

	For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	drologic criteria listed in each question do not apply to HGM classes. In this case, identify which hydrologic	the entire unit being rated, you probably have a unit with criteria in questions 1-7 apply, and go to Question 8.
	the water levels in the entire unit usually controlled by - go to 2 YES – the wetland class is Tid If yes, is the salinity of the water during periods of ann	lal Fringe ual low flow below 0.5 ppt (parts per thousand)?
	<i>is rated as an Estuarine wetland.</i> Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Es	NO – Saltwater Tidal Fringe (Estuarine) use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please ad II estuarine wetlands have changed (see p.).
2. The	× · ·	cce (>90%) of water to it. Groundwater and surface water
	off are NOT sources of water to the unit.	ce (>90%) of water to it. Groundwater and surface water
		vetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	use the form for Depressional wetlands.
3. Doe	es the entire wetland meet both of the following criteria	
		pres of a body of permanent open water (without any
	vegetation on the surface) where at least 20 ac	
	At least 30% of the open water area is deeper NO – go to 4 YES – The w	than 6.6 (2 m)? vetland class is Lake-fringe (Lacustrine Fringe)
4 Dec	es the entire wetland meet all of the following criteria?	(Lacusti nie Fringe)
4. Doe	The wetland is on a slope (slope can be very g	aradual)
		rection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being in	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep). Vetland class is Slope
5 Dec	es the entire wetland meet all of the following criteria?	in the class is slope
J. D06		e it gets inundated by overbank flooding from that stream or
	river.	on gets mundated by oversame mounting nom that stream of
	The overbank flooding occurs at least once ev	ery two years.
		ions that are filled with water when the river is not flooding
		vetland class is Riverine
		ich water ponds, or is saturated to the surface, at some time of
the	year. This means that any outlet, if present is higher the NO – go to 7 YES – The	e wetland class is Depressional
7 In th		ious depression and no overbank flooding. The unit does not
		s to be maintained by high groundwater in the area. The
	land may be ditched, but has no obvious natural outlet.	, , , , , , , , , , , , , , , , , , ,
	<mark>No – go to 8</mark> YES – The	e wetland class is Depressional
		tains several different HGM classes. For example, seeps at the base of a
		a depressional wetland has a zone of flooding along its sides. GO
		IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		retland unit being rated. If the area of the class listed in column 2 is less
than	10% of the unit, classify the wetland using the class that represent	ents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slo	ope + Riverine	Riverine
	ope + Depressional	Depressional
	ope + Lake-fringe	Lake-fringe
	epressional + Riverine along stream within boundary	Depressional
	epressional + Lake-fringe It Water Tidal Fringe and any other class of	Depressional Treat as ESTUARINE under wetlands with special
	eshwater wetland	characteristics
		upply to your wetland, or you have more than 2 HGM classes
	wetland boundary, classify the wetland as Depressiona	
W7 (1 1 1		

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
		per box)
D 1	Does the wetland have the potential to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38)
	 Unit is a depression with no surface water leaving it (no outlet) points = 3 	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	1
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 	- igui 0
	• We thand has persistent, ungrazed vegetation $> = 1/2$ of a rea	5
	• Wetland has persistent, ungrazed vegetation $< 1/10$ of area	
\rightarrow	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	<i>Least 2 months, but dries out sometime during the year. Do not count the area that is permanently</i>	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	8
	• Area seasonally ponded is $> 1/2$ total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	4
	• Area seasonary poinced is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	10
) 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44)
] 4	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(See p. 44)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	
	tields roads or clear-cut logging	
	X Residential urban areas not courses are within 150 ft of wetland	Multiplier
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier
	X Residential, urban areas, golf courses are within 150 ft. of wetland	-
•	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	<u>X2</u>
•	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	<u>X2</u>
◆) 3	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 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	<u>X2</u>
◆> 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other Other VES multiplier is 2 NO multiplier is 1 Mo multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	<u>X2</u> 20
◆) 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other Other VES multiplier is 2 NO multiplier is 1 Mo multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20
◆) 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other Other VES multiplier is 2 NO multiplier is 1 Mo multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46)
◆) 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	<u>X2</u> 20
◆) 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 20 (see p.46)
◆) 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other Other VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 20 (see p.46)
◆) 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 20 (see p.46)
◆) 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46)
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46)
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46)
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46)
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46) 0
◆	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other Other VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 20 (see p.46)
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of outlet	<u>X2</u> 20 (see p.46)
◆	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other Other VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 20 (see p.46)
◆) 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other WES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46) 0 3
◆) 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46)
◆	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other WES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 20 (see p.46) 0 3

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

Thes	se questions apply to wetlands of all HGM classes.	Points (only 1 score		
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.			
H 1				
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each classified area or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	ss is Figure		
	Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	ses = 2		
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has t cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure		
	X Permanently flooded or inundated 4 or more types present points = X Seasonally flooded or inundated 3 or more types present points = Occasionally flooded or inundated 2 types present points = Saturated only 1 type present points = 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 Points	2 1 0 2		
	Freshwater tidal wetland = 2 pointsMap of hydroperioH 1.3 Richness of Plant Species (see p. 75):	ods		
	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 satisfies 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: > 19 species	me 1		
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	or		
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	-		
	Use map of Cowardin clas	sses. 1		
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of po	oints		
	you put into the next column. Large, downed, woody debris within the wetland (> 4 in. 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 le 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that hav not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	ast 1 e		
	H 1 TOTAL Score – potential for providing habitat Add the points in the column ab	ove 6		

Wetland name or number 25A

2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points =	5 4 4 3 3 1 2 2 1 0 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? 	n at n 1 to

 H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). 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. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 158</i>). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life hi	3
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 Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	6
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	14
Commonta	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With e subjects exercise days 0.5 and	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	The workand is relatively undistinged in as no unking, furthing, curvation, glazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
	 At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	<i>question is used to screen out most sites before you need to contact WNHP/DNR.)</i> S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	Bogs (see p. 87)	
505	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	 wetland based on its function. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify experimental and the provide a set of the pr	
	 identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or mand? 	
	 pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? 	
	 YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

	and name of number <u>25A</u>					
SC4	Forested Wetlands (see p. 90)					
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
500	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)					
	YES = Category INO = Category II	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
~	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	Long Beach Peninsula lands west of SR 103 Creveland Westwart - lands west of SR 105					
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	YES = Category II NO = go to SC 6.2	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

Wetland name or number 25B

Name of	wetland (if known): 25B			Date of	site visit:	09-25-13
Rated by	r: <u>Colin Worsley / Matt Maynard</u> Traine	d by Ecology? Yes	<u>X</u> No	Date of tra	aining: <u>11-200</u>	05 / 04-2006
SEC:	32 TOWNSHIP: 25N	RANGE: 06E	Is S/T/R in A	ppendix D	? Yes	No X
			·			
	Map of wetland unit: Fig	gure	_ Estimated size	<u>0.33 acre</u>		
		SUMMARY OF RA	TING			
Categor	y based on FUNCTIONS provided by v	wetland: I	II	III	X	IV
8						
	Category I = Score > 70	Score for	Water Quality Fu	nctions	18	
	Category II = Score 51 - 69	Score	for Hydrologic Fu	nctions	10	
	Category III = Score $30 - 50$		ore for Habitat Fu		18	
		50		lictions	10	
	Category IV = Score < 30	ТО	TAL Score for Fu	nctions	46	
Categor	Category IV = Score < 30 y based on SPECIAL CHARACTERIST					ly X
Categor	y based on SPECIAL CHARACTERIST	ICS of Wetland I_	II	I	Does not app	
Category	y based on SPECIAL CHARACTERIST		II	I		
Categor	y based on SPECIAL CHARACTERIST	ICS of Wetland I_	II	I	Does not app	
Category	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special	ICS of Wetland I_ 'Y (choose the "higher ormation about the wetlaw	II est" category from wetland unit. and HGM Class	I	Does not app	
Categor	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special Characteristics	ICS of Wetland I_ 'Y (choose the "higher ormation about the wetland UME wetland	II est" category from wetland unit. and HGM Class ed for Rating	above")	Does not app	
Category	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine	ICS of Wetland I_ 'Y (choose the "higher ormation about the Wetla USC Depression	II est" category from wetland unit. and HGM Class ed for Rating onal	I	Does not app	
Sategor <u>:</u>	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	ICS of Wetland I_ 'Y (choose the "higher ormation about the " Wetla Depression Riverine	II est" category from wetland unit. and HGM Class ed for Rating onal	above")	Does not app	
Category	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	ICS of Wetland I_ 'Y (choose the "higher ormation about the " Wetla USC Depression Riverine Lake-frin	II est" category from wetland unit. and HGM Class ed for Rating onal	above")	Does not app	
Categor	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	ICS of Wetland I_ 'Y (choose the "higher ormation about the vertice UN Vetta US Depression Riverine Lake-frin Slope	II est" category from wetland unit. and HGM Class ed for Rating onal	above")	Does not app	
Categor <u>y</u>	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	ICS of Wetland I_ 'Y (choose the "higher ormation about the " Wetla USA Depression Riverine Lake-frin Slope Flats	II est" category from wetland unit. and HGM Class ed for Rating onal	above")	Does not app	
Category	y based on SPECIAL CHARACTERIST Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	ICS of Wetland I_ 'Y (choose the "higher ormation about the vertice UN Vetta US Depression Riverine Lake-frin Slope	II est" category from wetland unit. and HGM Class ed for Rating onal	above")	Does not app	

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic			
1.	Are the water levels in the entire unit usually controlled by	tides (i.e. except during floods)?		
	NO – go to 2 YES – the wetland class is Ti			
	If yes, is the salinity of the water during periods of an			
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)		
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it		
		arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and		
		stuarme wetrands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please		
	note, however, that the characteristics that define Category I a			
2.	The entire wetland unit is flat and precipitation is only sou			
	runoff are NOT sources of water to the unit.			
		wetland class is Flats		
	If your wetland can be classified as a "Flats" wetland,	use the form for Depressional wetlands.		
3.	Does the entire wetland meet both of the following criteria	?		
	The vegetated part of the wetland is on the sh	ores of a body of permanent open water (without any		
	vegetation on the surface) where at least 20 a			
	At least 30% of the open water area is deeper			
		wetland class is Lake-fringe (Lacustrine Fringe)		
4.	Does the entire wetland meet all of the following criteria?			
	The wetland is on a slope (slope can be very a	gradual). irection (unidirectional) and usually comes from seeps. It may		
	flow subsurface, as sheetflow, or in a swale w			
	The water leaves the wetland without being i			
		types of wetlands except occasionally in very small and		
	shallow depressions or behind hummocks (de	pressions are usually <3 ft diameter and less than 1 foot deep).		
	NO – go to 5 YES – The v	wetland class is Slope		
5.	Does the entire wetland meet all of the following criteria?			
		re it gets inundated by overbank flooding from that stream or		
	river. The querkerk flooding ecours at least once of			
	The overbank flooding occurs at least once ex NOTE: The rivering unit can contain depress	sions that are filled with water when the river is not flooding.		
		wetland class is Riverine		
6.	Is the entire wetland unit in a topographic depression in wh	nich water ponds, or is saturated to the surface, at some time of		
	the year. This means that any outlet, if present is higher th			
_	NO – go to 7 YES – Th	e wetland class is Depressional		
7.		vious depression and no overbank flooding. The unit does not		
	pond surface water more than a few inches. The unit seem	s to be maintained by high groundwater in the area. The		
	wetland may be ditched, but has no obvious natural outlet.			
		e wetland class is Depressional		
8.		ntains several different HGM classes. For example, seeps at the base of a		
	slope may grade into a riverine floodplain, or a small stream within	a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT		
		Use the following table to identify the appropriate class to use for the		
		wetland. NOTE: Use this table only if the class that is recommended in		
the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2				
than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.				
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating		
	Slope + Riverine	Riverine		
	Slope + Depressional	Depressional		
	Slope + Lake-fringe	Lake-fringe		
	Depressional + Riverine along stream within boundary	Depressional		
	Depressional + Lake-fringe	Depressional		
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special		
T£ -	freshwater wetland	characteristics		

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38
	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.50
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	2
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation > = 95% of area points = 5	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	-
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	5
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	D:
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	 Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 	
	• Area seasonally ponded is $> 1/4$ total area of wetland points = 2	2
	• Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	9
) 2	Does the wetland have the opportunity to improve water quality?	(see p. 44
52	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see <i>p</i> . +
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	
	<u>X</u> Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	
	Other YES multiplier is 2 NO multiplier is 1	X2
		18
•	TOTAL – Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	18
22		(see n Af
D 3	D 3.1 Characteristics of surface water flows out of the wetland unit	(see p.40
	• Unit is a depression with no surface water leaving it (no outlet) points = 4	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland 	-
	• The wetland is a "headwater" wetland points = 5	0
	 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 	0
	 The wetland is a "headwater" wetland	0
	 The wetland is a "headwater" wetland	0
	 The wetland is a "headwater" wetland	0
	 The wetland is a "headwater" wetland	
	 The wetland is a "headwater" wetland	0
	 The wetland is a "headwater" wetland	

-				
D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)		
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>			
	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			
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	10		

Thes	se questions apply to wetlands of all HGM classes.	Points (only 1 score		
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.			
H 1				
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground- cover) that each cover 20% within the forested polygon.	<i>is</i> Figure		
	Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation class 3 structures			
	2 structures points = 1			
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure		
	Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types present points = 2 X Occasionally flooded or inundated 2 types present points = 2 X Saturated only 1 type present points = 0 Y Permanently flowing stream or river in, or adjacent to, the wetland points = 0 X Seasonally flowing stream in, or adjacent to, the wetland points = 0 X Lake-fringe wetland 2 points	2		
	Freshwater tidal wetland = 2 points Map of hydroperio	.s		
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	e 1		
	H 1.4 Interspersion of Habitats (see p. 76):	<u>. </u>		
	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), of the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points Low = 1 point Low = 1 point Low = 2 points Low = 2 points Low = 2 points Low = 1 point Low = 2 points Low = 2			
	Use map of Cowardin class	96		
	Fight = 3 points [riparian braided channels]	3		
	H 1.5 <u>Special Habitat Features</u> (see p. 77):			
	Check the habitat features that are present in the wetland. The number of checks is the number of point you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long)	it 1		
	H 1 TOTAL Score – potential for providing habitat Add the points in the column abo	<i>e</i> 9		

Wetland name or number 25B

H 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	1
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	t o 1

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDEW PHS report p. 152</i>)	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
\underline{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. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	4
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
<u>X</u> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay	
characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of >	
51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in	
diameter at the largest end, and > 6 m (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	2
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	9
TOTAL for H 1 from page 8	9
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	18
Commonte:	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	Cat. I
	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 <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a multi-least standard canony with accessional small engines, with at least 8 transforms (20 transformation)	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I NO = X not a forested wetland with special characteristics	04012
SC5	Wetlands in Coastal Lagoons (see p. 91)	
505	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	~
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?	
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	~
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	NT 4
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number 25C

state or federal database.

SP3.

SP4.

		WETLAND RA Version 2 – Updated Updated Oct. 2	July 2006 to inc	rease accurac		ty among users			
Name of	f wetland (i	if known): 25C				Date of	site visit	: 09-2	5-13
Rated by	y: <u>Colin W</u>	orsley / Matt Maynard Tra	ined by Ecol	ogy? Yes	<u>X</u> No	Date of tra	ining: <u>11</u>	-2005 / (04-2006
SEC:	32	TOWNSHIP: 25N	RANGE	: <u>06E</u>	Is S/T/R in A	Appendix D?	Yes	1	No <u>X</u>
		Map of wetland unit:	Figure		_ Estimated size	e <u>0.33 acre</u>			
			SUMMA	RY OF RA	ATING				
Categor	y based of	n FUNCTIONS provided	by wetland:	I	II	III	X	_ IV_	
	Cate	egory I = Score > 70		Score for	Water Quality F	unctions		14	
	Categ	gory II = Score 51 - 69		Score	for Hydrologic F	unctions		14	
	Catego	ory III = Score $30 - 50$		Sc	ore for Habitat F	unctions		14	
	Catego	ory IV = Score < 30		ТО	TAL Score for F	unctions		42	
Categor	y based on	SPECIAL CHARACTERI	STICS of Wo	etland I_	II	D	oes not	apply	x
		Final Categ	gory (choos	e the "highe	est" category from	n above")		III	7
		Summary of basic	information	about the	wetland unit.				
		Wetland Unit has Specia Characteristics		Wetl	and HGM Class ed for Rating				
		Estuarine Natural Heritage Wetland	-	Depressi Riverine		X			
		Bog	1		nge				
		Mature Forest		Slope	-9-				
		Old Growth Forest		Flats					
		Coastal Lagoon		Freshwa	ter Tidal				
	_	Interdunal							
		None of the above	X		unit has multiple sses present				
		being rated meet any of the wetland according to the re-							ou will
	(Check List for Wetlands (in addition to the protec						YES	NO
		land unit been documented animal or plant species (T	as a habitat f			eatened or			X

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

Х

Х

Х

For the purposes of this rating system, "documented" means the wetland is on the appropriate

Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or

in a local management plan as having special significance.

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	<i>is rated as an Estuarine wetland.</i> Wetlands that were call esta Water Tidal Fringe in the Hydrogeomorphic Classification. E	 dal Fringe nual low flow below 0.5 ppt (parts per thousand)? NO – Saltwater Tidal Fringe (Estuarine) e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it uarine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and sistency between editions, the term "Estuarine" wetland is kept. Please
2.	The entire wetland unit is flat and precipitation is only sou	
	runoff are NOT sources of water to the unit. NO – go to 3 YES – The v	wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	vegetation on the surface) where at least 20 a At least 30% of the open water area is deeper	ores of a body of permanent open water (without any cres (8ha) in size;
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very to the water flows through the wetland in one of flow subsurface, as sheetflow, or in a swale wetland without being to the water leaves the wetland without being to NOTE: Surface water does not pond in these shallow depressions or behind hummocks (dependent of the state).	irection (unidirectional) and usually comes from seeps. It may vithout distinct banks. impounded? types of wetlands except occasionally in very small and pressions are usually <3 ft diameter and less than 1 foot deep).
5.	Does the entire wetland meet all of the following criteria?	wetland class is Slope
6	river. The overbank flooding occurs at least once even NOTE: <i>The riverine unit can contain depres</i> . NO – go to 6 YES – The	sions that are filled with water when the river is not flooding wetland class is Riverine
6.	the year. This means that any outlet, if present is higher th	hich water ponds, or is saturated to the surface, at some time of han the interior of the wetland. e wetland class is Depressional
7.	Is the entire wetland located in a very flat area with no obv pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet.	vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The
8.		ntains several different HGM classes. For example, seeps at the base of a
0.	slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REC AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your	a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in wetland unit being rated. If the area of the class listed in column 2 is less
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional Slope + Lake-fringe	Depressional Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Rivernie along stream within boundary Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics
If v		apply to your wetland, or you have more than 2 HGM classes
	hin a wetland boundary, classify the wetland as Depression	
	I Del E Muse Willie Willie A (7/00)	

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box)
D 1	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YESpoints = 4NOpoints = 0D 1.3Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	 Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	_
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	5
	• wettand has persistent, ungrazed vegetation < 1/10 of area	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	 Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	• Area seasonally ponded is $> 1/4$ total area of wetland points $= 2$	0
	 Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 Map of Hydroperiods 	
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 44
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	
	Other	X2
•	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 	
	 Unit is a depression with no surface water leaving it (no outlet)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland	0
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	0
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 	0
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 	0
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream</i> 	0
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of unit	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of unit	0
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of unit	

D 4	Does the wetland have the opportunity to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. X 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	(see p. 49) Multiplier
	Other	X2
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	14

Thes	se questi	ions apply to wetlands of all HGM classes.	Points
	HABI	ΓAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does t	he wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-	Figure
		cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have:4 structures or more points = 44 structures or more points = 43 structures points = 2	2
	H 1.2	$\begin{array}{c} 2 \text{ structurespoints} = 1 \\ \hline 1 \text{ structurepoints} = 0 \\ \hline \\$	Figure
		cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	1
		Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3	Richness of Plant Species (see p. 75):Count the number of plant species in the wetland that cover at least 10 ft² (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, purpleloosestrife, Canadian Thistle.List species below if you want to: > 19 species	1
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
		None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	(Use map of Cowardin classes.	1
	H 1.5	<u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.	
		 Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) 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 (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in each stratum of plants <i>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</i> 	1
		H 1 TOTAL Score – potential for providing habitat <i>Add the points in the column above</i>	6

Wetland name or number 25C

H 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	1
Н 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	t o 1

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crowr	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (full descriptions in WDFW PHS report p. 158).	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
a wet prairie (full descriptions in WDFW PHS report p. 161).	3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore	
and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in</i>	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristic	s
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) i	
western Washington and are $> 2 \text{ m}$ (6.5 ft) in height. Priority logs are $> 30 \text{ cm}$ (12 in) in diameter at the largest	
end, and > 6 m (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 8	4)
• There are at least 3 other wetlands within $1/2$ mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	-
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints =	,
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	_
wetlands within 1/2 milepoints =	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	_
disturbedpoints =	<mark>5</mark>
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints =	
• There is at least 1 wetland within 1/2 milepoints =	2
• There are no wetlands within 1/2 milepoints =)
H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.</i>	4 8
TOTAL for H 1 from page	8 6
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p</i> .	<i>1</i> 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 Category when the appropriate	
1	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO <u>X</u>	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	Cat. I
	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 <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 <u>Bogs</u> (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or part d? 	
	 pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant 	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I

wet								
SC4	Forested Wetlands (see p. 90)							
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish							
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland							
	based on its function.							
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a							
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)							
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or							
	more).							
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW							
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.							
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old							
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than							
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally							
	less than that found in old-growth.	Cat. I						
	YES = Category I $NO = X$ not a forested wetland with special characteristics							
SC5	Wetlands in Coastal Lagoons (see p. 91)							
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?							
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated							
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.							
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5							
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the							
	bottom.)							
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon							
	SC 5.1 Does the wetland meet all of the following three conditions?							
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has							
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).							
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed							
	or un-mowed grassland. The method is larger than $1/10$ core (4250 course ft.)	Cat. I						
a a (Cat. II						
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or							
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?							
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating							
	If you answer yes you will still need to rate the wetland based on its functions.							
	If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas:							
	Long Beach Peninsula lands west of SR 103							
	• Grayland-Westport lands west of SR 105							
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 							
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?							
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II						
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	~						
	YES = Category III	Cat. III						
	Category of wetland based on Special Characteristics							
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	NA						
	If you answered NO for all types enter "Not Applicable" on p. 1							

Wetland name or number 25F

	Version 2 – Updated July	2006 to in	RM – WESTERN W crease accuracy and reprodu- ew WDFW definitions for pr	cibility among user		
Name of we	tland (if known): 25F			Date of	site visit: <u>09-2</u>	7-13
Rated by: Co	olin Worsley / Matt Maynard Traine	ed by Eco	logy? Yes <u>X</u> No	Date of tra	ining: <u>11-2005 / 0</u>	4-2006
SEC:	32 TOWNSHIP: 25N	RANGE	E: 06E Is S/T/F	R in Appendix D	? Yes N	lo X
	Map of wetland unit: Fi					
		SUMMA	ARY OF RATING			
Category ba	ased on FUNCTIONS provided by	wetland:	I II	III	IV	X
Category I = Score > 70 Score for Water				ity Functions	12	
	Category II = Score 51 - 69		Score for Hydrolog	3		
	Category III = Score 30 – 50		Score for Habi	12		
Category IV = $Score < 30$			TOTAL Score for Functions 27			1
∟ Category ba	sed on SPECIAL CHARACTERIST	ICS of W	etland I	п	Does not apply	- x
g,			se the "highest" category		IV	
	C	•	a about the wetland uni			
	Wetland Unit has Special Characteristics		Wetland HGM C used for Ratin	Class Ig		
	Estuarine Natural Heritage Wetland		Depressional Riverine	X		
	Bog		Lake-fringe			
	Mature Forest		Slope			
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	Х	Check if unit has mul HGM classes present	tiple		
	etland being rated meet any of the of the test of					ou will
	Check List for Wetlands th (in addition to the protection				YES	NO
						v

SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

If 4		
	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.		
	NO – go to 2 YES – the wetland class is Ti If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		Estuarine wetlands were categorized separately in the earlier editions, and
	note, however, that the characteristics that define Category I a	sistency between editions, the term "Estuarine" wetland is kept. Please
2.		urce (>90%) of water to it. Groundwater and surface water
2.	runoff are NOT sources of water to the unit.	
		wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	use the form for Depressional wetlands.
3.	Does the entire wetland meet both of the following criteria	
	0 1	nores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a At least 30% of the open water area is deepen	
		wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (<i>slope can be very</i>	gradual).
		lirection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale v	
	The water leaves the wetland without being	
		types of wetlands except occasionally in very small and pressions are usually <3 ft diameter and less than 1 foot deep).
		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		re it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once e	very two years. sions that are filled with water when the river is not flooding.
		wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in w	hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the	
	NO - go to 7 $YES - Th$	e wetland class is Depressional
7		
<i>'</i> •		vious depression and no overbank flooding. The unit does not
,.	pond surface water more than a few inches. The unit seem	vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The
,.	pond surface water more than a few inches. The unit seen wetland may be ditched, but has no obvious natural outlet.	vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The
	pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – Th	vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The e wetland class is Depressional
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within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor per box)
1	Does the wetland have the <u>potential</u> to improve water quality?	1
) 1	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1	1
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	0
	YESpoints = 4NOpoints = 0	0
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	- igui e
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	a •
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetlandpoints = 2 Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 	0
	• Area seasonarry ponded is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	6
2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 4
2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 4
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	It stream of earleft alsonarges into wethand that drams developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	-
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplio
	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	<u>X2</u>
•	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 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	<u>X2</u>
•	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>X2</u>
◆) 3	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 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion?	<u>X2</u>
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◆ 3	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u>
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◆ 03	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 12 (see p.4) 0
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◆ 03	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 12 (see p.40
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D 4	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	3

The	se questions apply to wetlands of all HGM classes.	Points (only 1 score				
	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 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class in 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover)					
	If the unit has a forested class check if:	2				
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the twee of water regimes (hydroperiods) present within the wetland. The water regime has to	Figure				
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 0 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				
	H 1.3 <u>Richness of Plant Species</u> (<i>see p. 75</i>):	5				
	In this interference of the interpreters (ace properties) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the sam species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	e 1				
	H 1.4 Interspersion of Habitats (<i>see p.</i> 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), o the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.					
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	es Figure				
	Use map of Cowardin class	ès.				
	High = 3 points [riparian braided channels]	0				
	H 1.5 <u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of point	ats				
	 Check the habitat features that are present in the wettand. The number of checks is the number of point you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas th are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. 	t 1				
	H 1 TOTAL Score – potential for providing habitat Add the points in the column abov	<i>e</i> 4				

Wetland name or number 25F

H 2 Do	Does the wetland have the <u>opportunity</u> to provide habitat for many species?				
H 2	1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	Figure			
H 2					

 H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. 	
 a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points If wetland has 1 priority habitats = 3 points If wetland has 1 priority habitats = 3 points No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4) 	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 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 There is at least 1 wetland within 1/2 milepoints = 0 	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	4
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	12
Commontes	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt.	
	$\mathbf{YES} = \mathbf{Go} \text{ to } \mathbf{SC} 1.1 \qquad \mathbf{NO} \underline{\mathbf{X}}$	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	$\mathbf{YES} = Category I \qquad \mathbf{NO} = Category II$	Cat.]
	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 <i>Spartina</i> spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with pation species would be a Category 1. Do not however, or valued the area of Sperting in	Cat. I
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Ratin I/II
C2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	C ()
	or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat]
	Bogs (see p. 87)	
C3	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat.]

	Ecrected Wetlands (corp. 00)						
SC4	<u>Forested Wetlands</u> (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish						
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland						
	based on its function.						
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a						
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)						
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or						
	more).						
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees						
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW						
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.						
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old						
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than						
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally						
	less than that found in old-growth.	Cat. I					
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics						
SC5	Wetlands in Coastal Lagoons (see p. 91)						
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated						
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.						
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5						
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the						
	bottom.) $VES = Go to SC 5.1$ NO X not a watland in a coastal largeon						
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon						
	SC 5.1 Does the wetland meet all of the following three conditions?						
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).						
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed						
	or un-mowed grassland.	Cat. I					
	The wetland is larger than 1/10 acre (4350 square ft.)						
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Category II} \qquad \mathbf{C}$						
SC6	Interdunal Wetlands (see p. 93)						
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or						
	WBUO)?						
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating						
	If you answer yes you will still need to rate the wetland based on its functions.						
	 In practical terms that means the following geographic areas: Long Beach Peninsula lands west of SR 103 						
	 Long Beach Peninsula lands west of SK 105 Grayland-Westport lands west of SR 105 						
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109						
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?						
	$YES = Category II \qquad NO = go to SC 6.2$	Cat. II					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?						
	YES = Category III	Cat. III					
	Category of wetland based on Special Characteristics						
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.						
	If you answered NO for all types enter "Not Applicable" on p. 1	NA					

Wetland name or number 26A

state or federal database.

		Version 2 – Updated	July 2006 to inc	rease accurac	STERN WASHI y and reproducibility initions for priority ha	among users			
Name of	f wetland (i	f known): <u>26A</u>				_ Date of	site visi	t: <u>09-2</u>	7-13
Rated by	y: <u>Colin Wo</u>	orsley / Matt Maynard Tra	ained by Ecol	ogy? Yes	_X_ No I	Date of tra	ining: <u>1</u>	<u>1-2005 / 0</u>	04-2006
SEC:	32	TOWNSHIP: 25N	RANGE	: <u>06E</u>	Is S/T/R in Ap	pendix D	? Yes	N	No <u>X</u>
		Map of wetland unit:	Figure		Estimated size	0.91 acre			
			SUMMA	RY OF RA	TING				
Categor	y based on	FUNCTIONS provided	by wetland:	I	II	III	X	IV	
	Cate	gory I = Score > 70		Score for	Water Quality Fur	nctions		16	
	Categ	ory II = Score $51 - 69$		Score	for Hydrologic Fur	nctions		12	
	Catego	ory III = Score $30 - 50$		Sc	ore for Habitat Fur	nctions		19	
	Catego	ory IV = Score < 30		ТО	TAL Score for Fur	nctions		47	
Category	v based on	SPECIAL CHARACTER	ISTICS of We	etland I	II	I	Does not	apply	X
	•				st" category from			III	
				-		above)			
		Summary of basic Wetland Unit has Speci Characteristics		Wetla	and HGM Class and FGM Class and for Rating				
		Estuarine	_	Depressi	onal	X			
		Natural Heritage Wetland Bog	a –	Riverine	ige	(x)			
		Mature Forest		Slope	ige				
		Old Growth Forest		Flats					
		Coastal Lagoon Interdunal		Freshwat	er Tidal				
	F	None of the above	X		unit has multiple sses present	Х			
		being rated meet any of the wetland according to the re-							ou will
		Check List for Wetlands (in addition to the protec						YES	NO
	as the wetl	and unit been documented animal or plant species (7	as a habitat f			tened or			Х

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

For the purposes of this rating system, "documented" means the wetland is on the appropriate

SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.

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

Х

Х

Х

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	 NO – go to 2 YES – the wetland class is Tic If yes, is the salinity of the water during periods of and YES – Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Estuare 	lal Fringe
	note, however, that the characteristics that define Category I ar	
2.	The entire wetland unit is flat and precipitation is only sour runoff are NOT sources of water to the unit. NO – go to 3 YES – The v If your wetland can be classified as a "Flats" wetland,	vetland class is Flats
3.	Does the entire wetland meet both of the following criteria The vegetated part of the wetland is on the she vegetation on the surface) where at least 20 ac At least 30% of the open water area is deeper	? ores of a body of permanent open water (without any cres (8ha) in size;
4.	flow subsurface, as sheetflow, or in a swale w The water leaves the wetland without being i NOTE: Surface water does not pond in these shallow depressions or behind hummocks (dep	irection (unidirectional) and usually comes from seeps. It may ithout distinct banks.
5.	river. The overbank flooding occurs at least once ev NOTE: <i>The riverine unit can contain depress</i>	te it gets inundated by overbank flooding from that stream or very two years. <i>Sions that are filled with water when the river is not flooding</i> vetland class is Riverine
6.	the year. This means that any outlet, if present is higher th	hich water ponds, or is saturated to the surface, at some time of an the interior of the wetland. e wetland class is Depressional
7.	Is the entire wetland located in a very flat area with no obv pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does not
8.	Your wetland unit seems to be difficult to classify and probably cor slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REG AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your	tains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides. GO SIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in vetland unit being rated. If the area of the class listed in column 2 is less
	HGM Classes within the wetland unit being ratedSlope + RiverineSlope + DepressionalSlope + Lake-fringeDepressional + Riverine along stream within boundaryDepressional + Lake-fringe	HGM Class to Use in RatingRiverineDepressionalLake-fringeDepressionalDepressional
<mark>If y</mark>	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics apply to your wetland, or you have more than 2 HGM classes
	hin a wetland boundary, classify the wetland as Depression	

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
		per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	 Unit is a depression with no surface water leaving it (no outlet) points = 3 	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	1
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation > = 95% of area points = 5	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	5
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	5
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetlandpoints = 2 Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 	2
	• Area seasonarry pointed is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	8
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. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	
		X2
	YES multiplier is 2 NO multiplier is 1	X2
•	YES multiplier is 2 NO multiplier is 1	
•	YES multiplier is 2 NO multiplier is 1	
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	16
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit	16
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4	16 (see p.46
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	16 (see p.46
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4	16 (see p.46
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet) points = 4• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface• Unit is a no obvious natural outlet and/or outlet is a man-made ditch points = 1• (If ditch is not permanently flowing treat unit as "intermittently flowing")	16 (see p.46 0
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet) points = 4• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	16 (see p.46 0
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet) points = 4• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1(If ditch is not permanently flowing treat unit as "intermittently flowing")• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0D 3.2Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	16 (see p.46 0
◆ D 3	YES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet) points = 4• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0D 3.2Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	16 (see p.46 0
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	16 (see p.46 0
◆ D 3	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	16 (see p.46) 0
◆ D 3	VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) moints = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	16 (see p.46) 0
• D 3	VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	16 (see p.46 0 3
• D 3	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	16 (see p.46 0 3
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• D 3	VES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	16 (see p.46) 0 3
• D 3	VES multiplier is 2NO multiplier is 1TOTAL - Water Quality FunctionsMultiply the score from D1 by D2; then add score to table on p. 1HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.Does the wetland have the potential to reduce flooding and erosion?D 3.1Characteristics of surface water flows out of the wetland unit• Unit is a depression with no surface water leaving it (no outlet)	16 (see p.46) 0 3

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

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each classical and the second structure or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed The property plants	ss is Figure
	X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: Map of Cowardin vegetation class 3 structures or more points = 4	ses
	$\frac{2 \text{ structurespoints} = 1}{1 \text{ structurepoints}}$	= 0
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has t cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points =	
	X Seasonally flooded or inundated 3 or more types presentpoints = X Occasionally flooded or inundated 2 types presentpoints = X Saturated only 1 type presentpoints = X Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	$\begin{array}{c}2\\1\\0\end{array}$ 3
	Freshwater tidal wetland = 2 points Map of hydroperi	ods
	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 sa species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	or
	None = 0 points Low = 1 point None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Moderate = 2 points Moderate = 2 points Moderate = 2 points	-
	Use map of Cowardin cla	SSES.
	High = 3 points	3
	H 1.5 <u>Special Habitat Features</u> (see p. 77):	
	 Check the habitat features that are present in the wetland. The number of checks is the number of poryou put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that hav not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. 	e o
	H 1 TOTAL Score – potential for providing habitat Add the points in the column ab	<i>ove</i> 11

Wetland name or number 26A

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed"	5 4 8 7 8 1 8 1 2 2 1 2 2
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects the estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	1 1 1 1 1

• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p</i> .	<i>1</i> 19
TOTAL for H 1 from page	8 11
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2	4 8
• There are no wetlands within 1/2 milepoints =	
 within 1/2 milepoints = There is at least 1 wetland within 1/2 milepoints = 	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	-
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints =	3
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints =	5
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints =	5
 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, 	·/
addressed in question H 2.4) H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 8)	4)
If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
If wetland has 2 priority habitats = 3 points	
end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points	
western Washington and are $> 2 \text{ m}$ (6.5 ft) in height. Priority logs are $> 30 \text{ cm}$ (12 in) in diameter at the largest	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) it	1
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristic	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Nearshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore and Puyet Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
provide functional life history requirements for instream fish and wildlife resources.	
a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). <u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	3
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
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.	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i>	
http://wdfw.wa.gov/hab/phslist.htm)	
<i>descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report</i>	
H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
- T	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	Cat. I
	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 <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 <u>Bogs</u> (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 	
	 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? 	Cat. I
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Is not a bog for purpose of rating}$	Cat.

	and name or number <u>20A</u>				
SC4	Forested Wetlands (see p. 90)				
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland. The wetlend is larger than $1/10$ core (4250 course ft.)	Cat. I			
		C (H			
		Cat. II			
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

Wetland name or number 26B

WETLAND RATING FORM – WESTERN WASHINGTON Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats		
Name of wetland (if known): 26B Date of site v	visit: <u>03-2</u>	20-14
Rated by: <u>Colin Worsley / Matt Maynard</u> Trained by Ecology? Yes X No Date of training:	11-2005 /	04-2006
SEC: 32 TOWNSHIP: 25N RANGE: 06E Is S/T/R in Appendix D? Yes	s 1	No X
		10 <u>11</u>
Map of wetland unit: Figure Estimated size 0.02 acre		
SUMMARY OF RATING		
Category based on FUNCTIONS provided by wetland: I II II III	IV	X
Category I = Score > 70 Score for Water Quality Functions 4		
Category II = Score 51 - 69 Score for Hydrologic Functions 0		
Category III = Score 30 – 50 Score for Habitat Functions 8		_
Category IV = Score < 30 TOTAL Score for Functions 12	2	
Category based on SPECIAL CHARACTERISTCS of Wetland I II Does 1	not apply	X
Final Category (choose the "highest" category from above")	IV]
Summary of basic information about the wetland unit.		
Wetland Unit has Special CharacteristicsWetland HGM Class used for Rating		
Estuarine Depressional		
Natural Heritage Wetland Riverine		
Bog Lake-fringe		
Mature Forest Slope X		
Old Growth Forest Flats		
Coastal Lagoon Freshwater Tidal		
Interdunal		
None of the aboveXCheck if unit has multiple HGM classes present		
Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questi need to protect the wetland according to the regulations regarding the special characteristics found in the		ou will
Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO

	(in addition to the protection recommended for its category)	
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 8

Classification of Vegetated Wetlands for Western Washington

mu	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	criteria in questions 1-7 apply, and go to Question 8.
1.		
	NO – go to 2 YES – the wetland class is Ti If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		uarine in the first and second editions of the rating system are called Salt
		Estuarine wetlands were categorized separately in the earlier editions, and
		sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I a	
2.		rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	watland alogs is Flats
	NO – go to 3 YES – The If your wetland can be classified as a "Flats" wetland,	wetland class is Flats
2		
3.	Does the entire wetland meet both of the following criteria	nores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	
		wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	X The wetland is on a slope (slope can be very s	gradual).
		irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	X The water leaves the wetland without being i	
		e types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
	river.	re it gets inundated by overbank flooding from that stream or
	The overbank flooding occurs at least once e	very two years
		sions that are filled with water when the river is not flooding.
		wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in w	hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the	
	NO – go to 7 YES – Th	
7.	Is the entire wetland located in a very flat area with no ob-	vious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seem	ns 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 – Th	e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
		a depressional wetland has a zone of flooding along its sides. GO
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		r wetland. NOTE: Use this table only if the class that is recommended in wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repre	
		-
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
	freshwater wetland	characteristics

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
S 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance) points = 3 • Slope is 1% - 2% points = 2 • Slope is 2% - 5% points = 1 • Slope is greater than 5% points = 0	2
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = 0 points	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	Figure
	 Dense, uncut, herbaceous vegetation > 90% of the wetland area	0
	Aerial photo or map with vegetation polygons	
	Total for S 1Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	(see p. 67)
	Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland X Residential, urban areas, or golf courses are within 150 ft. upslope of wetland	Multiplier
	Other Other YES multiplier is 2 NO multiplier is 1	<u>X2</u>
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from S1 by S2; then <i>add score to table on p. 1</i>	4
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland (stems of plants should be thick enough (usually > 1/8in), or dense enough to remain erect during surface flows). Dense, uncut, rigid vegetation covers > 90% of the area of the wetland points = 6 Dense, uncut, rigid vegetation> 1/2 area of wetland 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 	0
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	0
	Add the points in the boxes above	
S 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note</i> <i>which of the following conditions apply.</i> Wetland has surface runoff that drains to a river or stream that has flooding problems	(see p. 70) Multiplier
	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	<u>X1</u>
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4; then <i>add score to table on p. 1</i>	0

Comments: Wetland A is adjacent to estuarine wetland but separate in that Wetland A is not influenced by salt water. Freshwater flows through Wetland A in one direction and enters North Bay.

	-	ons apply to wetlands of all HGM classes.	Points (only 1 sco
	HABIT	AT FUNCTIONS – Indicators that wetland functions to provide important habitat.	per box)
I 1	Does t	he wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)	Figure
		If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 Map of Cowardin vegetation classes 3 structures points = 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 1/4 acre to count (see text for descriptions of hydroperiods).	Figure
		Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 0 Permanently flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	0
	Н 1.3	Freshwater tidal wetland = 2 points Map of hydroperiods Richness of Plant Species (see p. 75): Map of hydroperiods	
		Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	0
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes	Figure
		None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Note: In you have 1 of more chaster or 3 vegetation classes and open water, the rating is always "high".	i igui e
		Use map of Cowardin classes	
		High = 3 points [riparian braided channels]	0
	Н 1.5	High = 3 points 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.	0
	H 1.5	High = 3 points 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.	0 s 0

Wetland name or number 26B

H 2 Do	pes the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H	2.1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	1
H	 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? 	1

 H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of nat fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, formin multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (33 dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed materia generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white OA: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of oak component is important (full descriptions in WDFW PHS report p. 158). X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic terrestrial cosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry pra a wet prairie (full descriptions in WDFW PHS report p. 161). X. Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and	tive g a 2 in) 5 crown al is f the c and iirie or o arshore, e in soils, basalt, fs. teristics 20 in) in largest	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (s • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoi • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoi • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	ints = 5 $ints = 5$ $ints = 3$ $ints = 3$ $ints = 2$ $ints = 0$	
TOTAL for H 1 from	page 8 0	
		· –
	on p. 1 8	J
Comments:		

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? NC = Catagory H	~ -
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
	 determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, 	Dual Rating I/II
	or contiguous freshwater wetlands.	
SC2	<u>Natural Heritage Wetlands</u> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	<i>question is used to screen out most sites before you need to contact WNHP/DNR.)</i> S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	Bogs (see p. 87)	
505	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	 wetland based on its function. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify energies as its 2. 	
	 identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or much? 	
	 pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? 	
	YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat I
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Is not a bog for purpose of rating}$	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	<u>Mature forests</u> : (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	a
	less than that found in old-growth.	Cat. I
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish $(> 0.5$	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.)	
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Category II}$	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
500	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. 11
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	Cat , 111
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
•	If you answered NO for all types enter "Not Applicable" on p. 1	NA
L	Jack and the second sec	11/1

Wetland name or number 26C

	WETLAND RATI Version 2 – Updated July Updated Oct. 2008	2006 to inc	rease accuracy	and reproducibility	y among users		
Name of wetland (if know	vn): <u>26C</u>				Date of sit	e visit: 03-20	0-14
Rated by: Colin Worsley	/ Matt Maynard Traine	d by Ecol	ogy? Yes _	X No	Date of traini	ng: <u>11-2005 / 0</u>	4-2006
SEC: 32 T	OWNSHIP: 25N	RANGE	: 06E	Is S/T/R in A	ppendix D?	Yes N	lo X_
	ap of wetland unit: Fig						
		SUMMA	RY OF RA	ГING			
Category based on FUN	CTIONS provided by v	wetland:	I	II	III	IV	X
Category I	= Score > 70		Score for	Water Quality Fu	inctions	4	
Category II	= Score 51 - 69		Score f	or Hydrologic Fu	inctions	6	
Category III	= Score 30 – 50		Sco	re for Habitat Fu	inctions	11	
Category IV	= Score < 30		TOT	TAL Score for Fu	unctions	21	
Category based on SPEC	IAL CHARACTERIST	ICS of Wa	atland I	п	Do	e not annly	X
Category based on SI EC					r		
	Final Categor	'y (choos	e the "highes	st" category from	n above")	IV	
	Summary of basic inf	ormation	about the w	etland unit.			
Wet	and Unit has Special			nd HGM Class			
Estua	Characteristics		Depressio	d for Rating nal	X		
	al Heritage Wetland		Riverine				
Bog	0		Lake-frin	ge			
Matur	re Forest		Slope				
	rowth Forest		Flats				
	al Lagoon		Freshwat	er Tidal			
Interd	unal						
None	of the above	Х		nit has multiple ses present			
Does the wetland being need to protect the wetlar							ou will
	List for Wetlands th dition to the protection					YES	NO
							v

	(in addition to the protection recommended for its category)	
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	<u> </u>	<u> </u>
	he hydrologic criteria listed in each question do not apply to tiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
1.	NO - go to 2 $YES - the wetland class is Tie$	
	If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and
		straine wetrands were categorized separatery in the carter entrols, and sistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I at	
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	
		vetland class is Flats
_	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	? ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	
	NO – go to 4 YES – The v	wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very g	
	flow subsurface, as sheetflow, or in a swale w	irection (unidirectional) and usually comes from seeps. It may
	The water leaves the wetland without being i	
		types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
	river.	re it gets inundated by overbank flooding from that stream or
	The overbank flooding occurs at least once ev	very two years.
	NOTE: The riverine unit can contain depress	sions that are filled with water when the river is not flooding
		wetland class is Riverine
6.		nich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher th NO - go to 7 $YES - Th$	
7		• • • • • • • • • • • • • • • • • • •
7.	pond surface water more than a few inches. The unit seem	vious depression and no overbank flooding. The unit does not s to be maintained by high groundwater in the area. The
	wetland may be ditched, but has no obvious natural outlet.	is to be maintained by man groundwater in the area. The
		e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in
		vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represented that the second s	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
	freshwater wetland	characteristics
		apply to your wetland, or you have more than 2 HGM classes
wit	hin a wetland boundary, classify the wetland as Depression	al for the rating.
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Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
) 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38
, ,	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.50
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 	1
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	1
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	riguite
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	1
	• Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	 ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 	
	 Area seasonally ponded is > 1/2 total area of wetland	0
	• Area seasonally ponded is < 1/4 total area of wetland points = 0	0
	Map of Hydroperiods Total for D 1 Add the points in the boxes above	
2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 4-
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	Third fields of ofendrus within 150 ft. of wethind	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplie
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	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	Multiplie X2
	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	Î
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	X2
•	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>X2</u>
◆) 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion?	<u>X2</u>
◆> 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	<u>X2</u>
◆> 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u>
◆) 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	<u>X2</u>
◆) 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 4 (see p.46
♦	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 4 (see p.46
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 4 (see p.46
◆) 3	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 VES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 4 (see p.40
◆	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 4 (see p.40
◆	fields, roads, or clear-cut logging	<u>X2</u> 4 (see p.40
◆ ○ 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 4 (see p.46
◆) 3	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 VES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	4 (see p.46 1
◆ ○ 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 4 (see p.46
◆ D 3	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 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	4 (see p.46 1
•	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 4 (see p.46
•	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	4 (see p.46 1
•	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	4 (see p.46 1 0

Wetland name or number 26C

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	6

Thes	se questi	ions apply to wetlands of all HGM classes.		Points
	HABI	ΓΑΤ FUNCTIONS – Indicators that wetland functions to provide important hab	itat.	(only 1 score per box)
H 1	Does t	he wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1	<u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed The Emergence plants	threshold for each class is	Figure
		4 structures or more points = 4 3 structures	rbaceous, moss/ground- wardin vegetation classes rres points = 2 rre points = 0	1
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. cover more than 10% of the wetland or 1/4 acre to count (see text for descrip	The water regime has to	Figure
		Permanently flooded or inundated4 or more typSeasonally flooded or inundated3 or more typOccasionally flooded or inundated2 types prese		0
	Н 1.3	Richness of Plant Species (see p. 75):Count the number of plant species in the wetland that cover at least 10 ft² (difference)species can be combined to meet the size threshold)You do not have to name the species. Do not include Eurasian Milfoil, reed conserving, Canadian Thistle.If you counted:> 19 species.5 - 19 species.		1
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegeta the classes and unvegetated areas (can include open water or mudflats) is high, me		
			If you have 4 or more classes r 3 vegetation classes and pen water, the rating is lways "high".	Figure
	(High = 3 points	se map of Cowardin classes.	1
	H 1.5	Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of cheryou put into the next column.	5 ft. long) vegetation extends at least at least 33 ft. (10m) krat for denning shrubs or trees that have mes are present in areas that imphibians) of plants an error.	0
		H 1 TOTAL Score – potential for providing habitat Add the	points in the column above	3

Wetland name or number 26C

H 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	1
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	t o 1

H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crow	m
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	11
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (full descriptions in WDFW PHS report p. 158).	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie of a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	r 3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	5
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore	e,
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils	,
rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basal	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	,
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characterist	ics
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in)	
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the large	st
end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points	
If we hand has 2 priority habitats = 3 points	
If we that has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p.	84)
• There are at least 3 other wetlands within $1/2$ mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	5
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints =	: 5
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints =	5
 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	3
disturbedpoints =	<mark>- 3</mark>
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints =	: 3
• There is at least 1 wetland within 1/2 mile	= 2
• There are no wetlands within 1/2 milepoints =	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.3	2.4 8
TOTAL for H 1 from pag	e 8 3
• Total Score for Habitat Functions Add the points for H 1 and H 2; then 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 – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species	Cat. I
	that cover more than 10% cover of non-narive pital species. If the non-narive sparing species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NOX	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
500	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	cut I
	$\mathbf{YES} = \mathbf{C} ategory I \qquad \mathbf{NO} = \mathbf{C} ategory II$	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1. Is the wetland one agree or larger, or is it in a magnin of wetlands that is one agree or larger?	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	a
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	~
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Version 2 – Updated	July 2006 to incr	M – WESTERN WASHE ease accuracy and reproducibility a WDFW definitions for priority ha	among users		
Name of wetland (if known): 26D			_ Date of	site visit: 03	-19-14
Rated by: Colin Worsley	Trained b	y Ecology? Yes <u>X</u> No	Date of	f training:	11-2005
SEC: 32 TOWNSHIP: 25N	RNGE:	06E Is S/T/R in Ap	pendix D?	Yes	No X_
Map of wetland unit:	Figure	Estimated size	~0.13 acr	e	
	SUMMAI	RY OF RATING			
Category based on FUNCTIONS provided	by wetland: I	II	III	X IV	
Category I = Score > 70		Score for Water Quality Fun	ctions	16	
Category II = Score 51 - 69		Score for Hydrologic Functions		18	
Category III = Score $30 - 50$		Score for Habitat Fun	ctions	14	
Category IV = Score < 30		TOTAL Score for Fun	ctions	48	
Category based on SPECIAL CHARACTERI	ISTCS of Wetl	and I II	D	oes not apply	x
Final Categ	gory (choose	the "highest" category from a	above")	III	
Summary of basic	information a	about the wetland unit.			
Wetland Unit has Specia Characteristics	al	Wetland HGM Class used for Rating			
Estuarine		Depressional			
Natural Heritage Wetland	d	Riverine	X		
Bog		Lake-fringe	(x)		
Mature Forest		Slope			
Old Growth Forest		Flats Freshwater Tidal			
Coastal Lagoon Interdunal		ricshwater fluar			
None of the above	X	Check if unit has multiple HGM classes present	Х		
Does the wetland being rated meet any of th	ne criteria bel	•	ny of the a	uestions below	you will

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 8

Classification of Vegetated Wetlands for Western Washington

	If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.					
1.						
	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)				
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it				
		arine in the first and second editions of the rating system are called Salt				
		stuarine wetlands were categorized separately in the earlier editions, and				
		istency between editions, the term "Estuarine" wetland is kept. Please				
	note, however, that the characteristics that define Category I and					
2.	The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water					
	runoff are NOT sources of water to the unit. NO - go to 3 YES – The v	vetland class is Flats				
	If your wetland can be classified as a "Flats" wetland,					
3.	Does the entire wetland meet both of the following criteria					
5.		ores of a body of permanent open water (without any				
	vegetation on the surface) where at least 20 ac					
	At least 30% of the open water area is deeper	than 6.6 (2 m)?				
	$\frac{NO - go \text{ to } 4}{YES} - The v$	vetland class is Lake-fringe (Lacustrine Fringe)				
4.	Does the entire wetland meet all of the following criteria?					
	The wetland is on a slope (<i>slope can be very</i> g					
	flow subsurface, as sheetflow, or in a swale w	irection (unidirectional) and usually comes from seeps. It may				
	The water leaves the wetland without being i					
		types of wetlands except occasionally in very small and				
		pressions are usually <3 ft diameter and less than 1 foot deep).				
	NO – go to 5 YES – The v	vetland class is Slope				
5.	Does the entire wetland meet all of the following criteria?					
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or					
	river The overbank flooding occurs at least once ev	any two yoons				
		ions that are filled with water when the river is not flooding				
		vetland class is Riverine				
6.	Is the entire wetland unit in a topographic depression in wh	nich water ponds, or is saturated to the surface, at some time of				
	the year. This means that any outlet, if present is higher th	an the interior of the wetland.				
		e wetland class is Depressional				
7.		ious depression and no overbank flooding. The unit does not				
	pond surface water more than a few inches. The unit seem	s 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	e wetland class is Depressional				
8.		tains several different HGM classes. For example, seeps at the base of a				
0.	slope may grade into a riverine floodplain, or a small stream within					
		SIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT				
	AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the					
		wetland. NOTE: Use this table only if the class that is recommended in				
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less					
	than 10% of the unit, classify the wetland using the class that repres					
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating				
	Slope + Riverine	Riverine Demonstrat				
	Slope + Depressional Slope + Lake-fringe	Depressional Lake-fringe				
	Depressional + Riverine along stream within boundary	Depressional				
	Depressional + Lake-fringe	Depressional				
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special				
	freshwater wetland	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					
with	hin a wetland boundary, classify the wetland as Depression	at for the rating.				

Wetland Rating Form - Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

R	R Riverine and Freshwater Tidal Fringe Wetlands				
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.				
R 1	Does the wetland have the <u>potential</u> to improve water quality? (see p.52)				
	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	Figure			
	 Depressions present but cover < 1/2 area of wetland. No depressions present points = 0 	2			
	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height): • Trees or shrubs > 2/3 area of the unit	Figure			
	 Ougrazed, heroaceous plants > 2/3 area of unit	6			
	Add the points in the boxes above	8			
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. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.				
	 Residential, upon areas, gon conversal e within 150 ft. of wertain areas, gon conversal e wertain areas,	Multiplier			
	Other	X2			
	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from R1 by R2; then add score to table on p. 1	16			
•	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	10			
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.54)			
	R 3.1 Characteristics of the overbank storage the wetland provides: <i>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).</i> Calculate the ratio: (average width of unit) / (average width of stream between banks).	Figure			
	• If the ratio is more than 20points = 9 • If the ratio is between $10 - 20$ points = 6 • If the ratio is 5- <10points = 4 • If the ratio is 1- <5points = 2	2			
1	• If the ratio is < 1 points = 1	2			
	Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90%)	2 Figure			
	Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as				
	Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes): • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area	Figure			
R 4	Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes): • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area	Figure 7 9 (see p.57)			
R 4	Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes): • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area	Figure 7 9 (see p.57)			
R 4	Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes): • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area	Figure 7 9 (see p.57)			

Thes	e 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 <u>potential</u> to provide habitat for many species?	per box)		
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: Cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures points = 2	Figure		
	$\frac{2 \text{ structurespoints} = 1}{\text{H 1.2 Hydroperiods (see p.73):}}$			
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 X Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 X Permanently flowing stream or river in, or adjacent to, the wetland	Figure 2		
	Lake-fringe wetland			
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1		
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points Low = 1 point Low = 1 point Moderate = 2 points Note: If you have 4 or more classes and open water, the rating is always "high".	Figure		
	Use map of Cowardin classes.	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 (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	1		
	H 1 TOTAL Score – potential for providing habitat <i>Add the points in the column above</i>	6		

Wetland name or number 26D

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use) points = 5 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference	
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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects t estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? 	nt o 1

 11.3. <u>Sear or adjacent to other priority habitats iside by WDTW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.we.gov/hab/philits.htm</u>) Which of the following priority habitats are within 330 ft. (100m) of the welland unit? NOTE: the connections do not have to be relatively andisturbed. Appen Stands: Pare or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fists and wildlite (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Matter forests: (Old-growth west of Casada cersi) Stands with average diameter secceeding 51 or (21 in) dtb or >200 years of age. (Matter forests) Stands with average diameter secceeding 51 or (21 in) dtb or >200 years of age. (Matter forests) Stands with average diameter secceeding 51 or (21 in) dtb) or >200 years of age. (Matter foreignion in WDFW PHS report p. 152). X. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terretime constraint (out) due scriptions in WDFW PHS report p. 159). X. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terretimes tor instrame fist and water fist and water priors of the days of the since respective strates of the since respective strate active the form of a dry prairie or a wet prairie (out) due strate to approach with. Y. Riparta The combination of physical, biological, and chemical processes and conditions that interast to provide functional life the since response of the days due strates to the prove type. 16.1, . X. Instream: The combinition of physical, biological, and chemical processes and c			
Herbaceous Baldis: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests; (Old-growth west of Cascade cress) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with al least 20 trees/hu (8 trees/acre). 9.8 cm (2.8 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; (decay, decadence, numbers of snage, and quanity of large downed material is generally less than that found in old-growth; 80 - 200 years of avec of diverse canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Negative canopy with Oak; Woodlands Stands with <i>NUFW PHS report p. 158</i>). X Ripartain: The are adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial cossystems which mutually influence each other. 3 X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. 3 Nearsbore: Relatively undisturbed nearsbore habitats. These include Costast Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW Pist</i> . An <i>intervol to adjossary in Appendix A</i>). 3 Caves: A naturally offund accurring sait y excess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. 3 Caves: A naturally offund accurring sait bey are dead or dying and exhibit sa		 <u>http://wdfw.wa.gov/hab/phslist.htm</u>) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). 	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 • There is at least 1 wetland within 1/2 mile		 fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). 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. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). X. Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Tal	3
 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed			
disturbed. points = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile		 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4 8 TOTAL for H 1 from page 8 6		 disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 There is at least 1 wetland within 1/2 milepoints = 2 	
<i>TOTAL for H 1 from page 8</i> 6			
▼ Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p.</i> 1 14	•		
	•	Total Score for Habitat FunctionsAdd the points for H 1 and H 2; then 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.

	criteria are met.	
C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt.	
	$\mathbf{YES} = \text{Go to SC } 1.1 \qquad \text{NO } \underline{X}$	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat.]
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. I
	 determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Ratin I/II
C2	Natural Heritage Wetlands (see p. 87)	
C2	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?	Cat]
	YES = Category 1 NO not a Heritage Wetland	
C3	<u>Bogs</u> (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of ratingNO = go to question 4NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	 Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat.
	YES = Category I NO = Is not a bog for purpose of rating	

SC4	Forested Wetlands (see p. 90)						
564	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish						
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland						
	based on its function.						
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a						
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)						
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or						
	more).						
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees						
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW						
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.						
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old						
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than						
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally						
	less than that found in old-growth.	Cat. I					
	YES = Category I $NO = X$ not a forested wetland with special characteristics						
SC5	Wetlands in Coastal Lagoons (see p. 91)						
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated						
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.						
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5)						
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bettern)						
	bottom.) YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon						
	-						
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has						
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).						
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed						
	or un-mowed grassland.	Cat. I					
	The wetland is larger than 1/10 acre (4350 square ft.)	Cal. I					
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Category II}$	Cat. II					
SC6	Interdunal Wetlands (see p. 93)						
500	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or						
	WBUO)?						
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating						
	If you answer yes you will still need to rate the wetland based on its functions.						
	In practical terms that means the following geographic areas:						
	• Long Beach Peninsula lands west of SR 103						
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis - lands west of SR 115 and SR 109 						
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?						
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. 11					
	YES = Category III	Cat. III					
	Category of wetland based on Special Characteristics						
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.						
	If you answered NO for all types enter "Not Applicable" on p. 1	NA					

Wetland name or number 28A

		WETLAND RA Version 2 – Updated Ju Updated Oct. 20	uly 2006 to ind	crease accurac		y among users		
Name of	f wetland (if known): <u>28A</u>				Date of site	e visit: <u>09-2</u>	7-13
Rated by	y: <u>Colin W</u>	orsley / Matt Maynard Trai	ned by Ecol	logy? Yes	X No	Date of trainin	ng: <u>11-2005 / (</u>	04-2006
SEC:	29	TOWNSHIP: 25N	RANGE	E: 06E	Is S/T/R in A	Appendix D? Y	esl	No <u>X</u>
		Map of wetland unit:						
			SUMMA	ARY OF RA	TING			
Categor	y based o	n FUNCTIONS provided b				111	IV	X
	Cate	egory I = Score > 70		Score for	Water Quality Fu	inctions	8	
		gory II = Score 51 - 69		Score	for Hydrologic Fu	inctions	6	_
		ory III = Score $30 - 50$			ore for Habitat Fu		13	_
	Ū	ory IV = $Score < 30$			TAL Score for Fu		27	
		-				L		
Categor	y based on	SPECIAL CHARACTERIS	STICS of W	etland I	II	Does	s not apply	X
		Final Categoria	ory (choos	se the "highe	est" category fron	n above")	IV	
		Summary of basic i	nformation	about the	wetland unit.	-		
		Wetland Unit has Special Characteristics		Wetla	and HGM Class ed for Rating			
		Estuarine		Depressi		X		
		Natural Heritage Wetland		Riverine		(x)		
		Bog		Lake-fri	nge			
		Mature Forest		Slope				
		Old Growth Forest		Flats				
		Coastal Lagoon		Freshwat	ter Tidal			
	_	Interdunal						
		None of the above	Х		unit has multiple sses present	Х		
		being rated meet any of the wetland according to the reg						ou will
	(Check List for Wetlands (in addition to the protecti					YES	NO
		land unit been documented a animal or plant species (T/A	s a habitat j			atened or		Х
		osos of this rating system "	· ·	" moone the	watland is on the	appropriato		

	state or federal database.	
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?	Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.					
 Are the water levels in the entire unit usually control NO – go to 2 YES – the wetland class If yes, is the salinity of the water during period YES – Freshwater Tidal Fri 	ss is Tidal Fringe s of annual low flow below 0.5 ppt (parts per thousand)?				
<i>is rated as an Estuarine wetland.</i> Wetlands that were Water Tidal Fringe in the Hydrogeomorphic Classific this separation is being kept in this revision. To maint	<i>al Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it</i> call estuarine in the first and second editions of the rating system are called Salt ation. Estuarine wetlands were categorized separately in the earlier editions, and ain consistency between editions, the term "Estuarine" wetland is kept. Please gory I and II estuarine wetlands have changed (see p).				
	nly source (>90%) of water to it. Groundwater and surface water				
runoff are NOT sources of water to the unit.					
	- The wetland class is Flats				
	etland, use the form for Depressional wetlands.				
3. Does the entire wetland meet both of the following					
vegetation on the surface) where at lea	the shores of a body of permanent open water (without any st 20 acres (8ha) in size:				
At least 30% of the open water area is					
	- The wetland class is Lake-fringe (Lacustrine Fringe)				
4. Does the entire wetland meet all of the following cr	iteria?				
The wetland is on a slope (slope can be					
	n one direction (unidirectional) and usually comes from seeps. It may				
flow subsurface, as sheetflow, or in a s The water leaves the wetland without					
	n these types of wetlands except occasionally in very small and				
	cks (depressions are usually <3 ft diameter and less than 1 foot deep).				
NO – go to 5 YES	- The wetland class is Slope				
5. Does the entire wetland meet all of the following cr The unit is in a valley or stream chann	iteria? el where it gets inundated by overbank flooding from that stream or				
river.					
The overbank flooding occurs at least					
	<i>depressions that are filled with water when the river is not flooding</i> – The wetland class is Riverine				
	on in which water ponds, or is saturated to the surface, at some time of				
the year. This means that any outlet, if present is hi					
	S – The wetland class is Depressional				
pond surface water more than a few inches. The un wetland may be ditched, but has no obvious natural					
	S – The wetland class is Depressional				
slope may grade into a riverine floodplain, or a small stream	ably contains several different HGM classes. For example, seeps at the base of a n within a depressional wetland has a zone of flooding along its sides. GO GIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT				
	lecide). Use the following table to identify the appropriate class to use for the				
	hin your wetland. NOTE: Use this table only if the class that is recommended in				
	of the wetland unit being rated. If the area of the class listed in column 2 is less				
than 10% of the unit, classify the wetland using the class th	at represents more than 90% of the total area.				
HGM Classes within the wetland unit being rat					
Slope + Riverine	Riverine				
Slope + Depressional Slope + Lake-fringe	Depressional Lake-fringe				
Depressional + Riverine along stream within boun					
Depressional + Lake-fringe	Depressional				
Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special				
freshwater wetland	characteristics				
	riteria apply to your wetland, or you have more than 2 HGM classes				
within a wetland boundary, classify the wetland as Depr	essional for the rating.				

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1		per box)
D 1	Does the wetland have the potential to improve water quality? D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	1
	• On this a 'flat' depression (Q.7 on Key), of the Prats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 	3
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	5
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 4	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	Map of Hydroperiods	<u> </u>
	Total for D 1Add the points in the boxes above	4
) 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. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	-
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	
•	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1	<u>X2</u>
♦	Wetland is fed by groundwater high in phosphorus or nitrogen Other	<u>X2</u>
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>X2</u> 8
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.	<u></u> 8
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4	<u>X2</u>
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	<u>X2</u> 8 (see p.46
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	<u>X2</u> 8
◆ 03	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 8 (see p.40
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	<u>X2</u> 8 (see p.46
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>lf ditch is not permanently flowing treat unit as "intermittently flowing"</i>) • Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	<u>X2</u> 8 (see p.46
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 8 (see p.46
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	<u>X2</u> 8 (see p.46
• D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 8 (see p.46
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen VES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit . Unit is a depression with no surface water leaving it (no outlet)	8 (see p.46 0
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 8 (see p.46
• D 3	Wetland is fed by groundwater high in phosphorus or nitrogen WES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit . unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 8 (see p.46
• D 3	Wetland is fed by groundwater high in phosphorus or nitrogen WES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 8 (see p.46 0
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen WES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit . unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 8 (see p.46
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the <u>potential</u> to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	<u>X2</u> 8 (see p.46 0

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?					
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply</i> .					
	Wetland is in a headwater of a river or stream that has flooding problems.					
	X 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					
٠	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	6				

Thes	se questions apply to wetlands of all HGM classes.	Points (only 1 score		
	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 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each cl 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover)	ass is Figure		
	Image: A structures Image: A structures Forested (areas where these have > 30% cover) If the unit has a forested class check if: X The forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groun cover) that each cover 20% within the forested polygon. Map of Cowardin vegetation class has 2 structures or more points = 4 Add the number of vegetation types that qualify. If you have: Map of Cowardin vegetation class a structures points = 4 2 structures points = 1 1 structure point	asses $s = 2$		
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods) X Permanently flooded or inundated 4 or more types present).		
	Seasonally flooded or inundated 3 or more types presentpoints Occasionally flooded or inundated 2 types presentpoints X Saturated only 1 type presentpoints 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 = 1 = 0 = 2		
	Freshwater tidal wetland = 2 points Map of hydroper H 1.3 Richness of Plant Species (see p. 75):	riods		
	If 1.5 <u>Kterness of Francispecies</u> (see p. 75). Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the 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:	$\frac{2}{1}$ 1		
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1 the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	.), or		
	None = 0 pointsLow = 1 pointModerate = 2 pointsNote: If you have 4 or more or or 3 vegetation classes and open water, the rating is always "high".	nd		
	Use map of Cowardin co High = 3 points Fiparian braided channels]	lasses. 1		
	High = 3 points 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 you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that ha not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in area 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	least 0 ive		
	NOTE: The 20% stated in early printings of the manual on page 78 is an error.H 1 TOTAL Score – potential for providing habitatAdd the points in the column a	bove 5		

Wetland name or number 28A

1 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	5 4 4 3 3 1 2 2 1 0 1
H 2.2	· · ·	at 1 1 to

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
-	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
	 determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, 	Dual Rating I/II
SC2	or contiguous freshwater wetlands. Natural Heritage Wetlands (see p. 87)	
SC2	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	<i>question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	Bogs (see p. 87)	
505	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	 wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identific experimentation 2) 	
	 identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or 	
	 pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? 	
	 YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western 	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)					
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I $NO = X$ not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	$\mathbf{YES} = \text{Go to SC 5.1} \qquad \mathbf{NO} \underline{X} \text{ not a wetland in a coastal lagoon}$					
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.					
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I				
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Category II}$	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
SCU	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	• Long Beach Peninsula lands west of SR 103					
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>				
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
1 *	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

Wetland name or number 28B

		WETLAND RATI Version 2 – Updated July Updated Oct. 2008	2006 to ir	ncrease accurac	y and reproducibil	lity among users		
Name of	wetland (i	f known): 28B				Date of sit	e visit: <u>09-2</u>	7-13
Rated by	: <u>Colin Wo</u>	orsley / Matt Maynard Traine	ed by Eco	ology? Yes	X No	Date of training	ng: <u>11-2005 / (</u>)4-2006
SEC:	32	TOWNSHIP: 25N	RANG	E: <u>06E</u>	Is S/T/R in	Appendix D? Y	/es N	No <u>X</u> _
		Map of wetland unit: Fig	gure		_ Estimated si	ze 0.03 acre		
			SUMM	ARY OF RA	TING			
Category	y based or	n FUNCTIONS provided by		-		III	IV	X
	Cate	gory I = Score > 70		Score for	Water Quality	Functions	12	
		sory II = Score $51 - 69$			for Hydrologic	-	3	-
	-	bry III = Score $30 - 50$			ore for Habitat	-	6	-
	U						-	-
	Catego	ory IV = $\text{Score} < 30$		10	TAL Score for	Functions	21	
Category	based on	SPECIAL CHARACTERIST	ICS of W	etland I	II_	Doe	es not apply	X
		Final Catego	ry (choo	se the "high	st" category fro	om above")	IV	7
		Summary of basic inf	ormatio	n about the	wetland unit.	-		
		Wetland Unit has Special		1	and HGM Clas	SS		
		Characteristics			ed for Rating			
		Estuarine		Depressi		X		
		Natural Heritage Wetland		Riverine				
		Bog		Lake-fri	ıge			
		Mature Forest		Slope		(x)		
		Old Growth Forest		Flats				
		Coastal Lagoon		Freshwa	ter Tidal			
]	Interdunal						
]	None of the above	x		unit has multipl sses present	e X		
	orotect the	being rated meet any of the of wetland according to the regu	lations re	garding the	special characte			ou will
	C	Check List for Wetlands th	lat Need	Additiona	I Protection		VES	NO

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	NO – go to 2 YES – the wetland class is Tie If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and
		istency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and	
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit. NO - go to 3 $YES - The v$	vetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
	The vegetated part of the wetland is on the sh	ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper NO – go to 4 YES – The v	than 6.6 (2 m)? wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	wenand class is Dake-Hinge (Dacustine Finge)
т.	The wetland is on a slope (<i>slope can be very</i>)	gradual).
	The water flows through the wetland in one d	irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland without being in these works and the set need in these set.	mpounded? types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		vetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		re it gets inundated by overbank flooding from that stream or
	river. The overbank flooding occurs at least once ev	ierv two vears
		sions that are filled with water when the river is not flooding.
		vetland class is Riverine
6.		nich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the NO – go to 7 YES – Th	
7		e wetland class is Depressional
7.	pond surface water more than a few inches. The unit seem	ious depression and no overbank flooding. The unit does not s to be maintained by high groundwater in the area. The
	wetland may be ditched, but has no obvious natural outlet.	
		e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the
		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 v	vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represent	sents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional Slope + Lake-fringe	Depressional Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
T C	freshwater wetland	characteristics
1 f x	you are unable still to determine which of the above criteria:	apply to your wetland, or you have more than 2 HGM classes

within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (0.7 on key), or in the Flats class, with permanent surface 	1
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	YES points = 4 NO points = 0	0
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes 	5
	 D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 	Figure
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	Map of Hydroperiods	
D 2	Total for D 1Add the points in the boxes aboveDoes the wetland have the opportunity to improve water quality?	6 (see p. 44
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplio X2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	12
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	_
) 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.40
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	0
	 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	D 3.3 Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream</i>	

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity,	(see p. 49)			
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>				
	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply.				
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems 				
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or				
	stream that has flooding problems Other				
	YES multiplier is 2 NO multiplier is 1				
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	3			

	HARITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	(only 1 score			
	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 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.	<i>is</i> Figure			
	If the unit has a forested class check if:	2			
	H 1.2 <u>Hydroperiods</u> (see p.73):	Figure			
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 2 Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 2 Yermanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	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 san species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species				
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), of the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points $Low = 1$ point $Moderate = 2$ points Note: If you have 4 or more class or 3 vegetation classes and open water, the rating is always "high".				
	Use map of Cowardin class High = 3 points	9 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 por you put into the next column.	st O nat			

Wetland name or number 28B

I 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed"	
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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects the estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? 	t o 1

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NOX	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

		1				
SC4	Forested Wetlands (see p. 90)					
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old OB have an average diameters (dbb) exceeding 21 inches (52 cm); ensure government he large than					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	Cat I				
	YES = Category I NO = X not a forested wetland with special characteristics	Cat. I				
a a -	Wetlands in Coastal Lagoons (see p. 91)					
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the</i>					
	bottom.)					
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)	0001				
	YES = Category INO = Category II	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 					
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	YES = Category II NO = go to SC 6.2	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

Wetland name or number 28C

state or federal database.

		WETLAND RAT Version 2 – Updated July Updated Oct. 2008	y 2006 to inc	rease accurac		among users		
Name of	wetland (it	f known): <u>28C</u>				_ Date of site	visit: 09-2	7-13
Rated by	v: <u>Colin Wo</u>	orsley / Matt Maynard Train	ed by Ecolo	ogy? Yes	<u>X</u> No <u> </u>	Date of training	g: <u>11-2005 / 0</u>)4-2006
SEC:	29	TOWNSHIP: 25N	RANGE:	06E	Is S/T/R in Ap	pendix D? Ye	es N	NoX
		Map of wetland unit: Fi			-	-		
			SUMMA	RY OF RA	TING			
Categor	y based on	FUNCTIONS provided by				III	IV	X
	Categ	gory I = Score > 70		Score for	Water Quality Fun	ctions	12	7
	Categ	ory II = Score 51 - 69		Score	for Hydrologic Fun	ctions	3	-
	Catego	ry III = Score 30 - 50		Sc	ore for Habitat Fun	ctions	13	-
	Catego	ry IV = $Score < 30$		TO	TAL Score for Fun	ctions	28	
a (SPECIAL CHARACTERIST				L		
		Final Catego Summary of basic in	•	-		above")	IV]
		Wetland Unit has Special Characteristics			and HGM Class ed for Rating			
		Estuarine		Depressi		X		
		Natural Heritage Wetland		Riverine				
		Bog			nge			
		Mature Forest		Slope				
		Old Growth Forest		Flats Freshwat	on Tidal			
		Interdunal		Freshwa				
	_	None of the above	X		unit has multiple sses present			
		being rated meet any of the wetland according to the regu		low? If yo	u answer YES to a			ou will
		heck List for Wetlands the contract the contract the contract of the contract the contract to the protection to the protection to the protect to the contract					YES	NO
	as the wetle	and unit been documented as	a habitat f			ened or		Х

SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

For the purposes of this rating system, "documented" means the wetland is on the appropriate

Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or

in a local management plan as having special significance.

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

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

Х

Х

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The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

		the entire unit being relad, you probably have a unit with
mu	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	 NO – go to 2 YES – the wetland class is Ti If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fring is rated as an Estuarine wetland. Wetlands that were call est Water Tidal Fringe in the Hydrogeomorphic Classification. E 	dal Fringe nual low flow below 0.5 ppt (parts per thousand)? NO – Saltwater Tidal Fringe (Estuarine) e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it uarine in the first and second editions of the rating system are called Salt Estuarine wetlands were categorized separately in the earlier editions, and sistency between editions, the term "Estuarine" wetland is kept. Please
2.	The entire wetland unit is flat and precipitation is only sou	
2.	runoff are NOT sources of water to the unit.	wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
		nores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper	
	NO - go to 4 YES – The	wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (<i>slope can be very</i>	
		lirection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale with a swale	
	The water leaves the wetland without being	p types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	•
		re it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once e	
		sions that are filled with water when the river is not flooding
	NO – go to 6 YES – The	wetland class is Riverine
_		
6.		hich water ponds, or is saturated to the surface, at some time of
6.	the year. This means that any outlet, if present is higher the	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland.
	the year. This means that any outlet, if present is higher the NO – go to 7 \overline{YES} – The NO – go to 7 \overline{YES}	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. e wetland class is Depressional
	the year. This means that any outlet, if present is higher th NO – go to 7 YES – Th Is the entire wetland located in a very flat area with no ob- pond surface water more than a few inches. The unit seen wetland may be ditched, but has no obvious natural outlet.	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. e wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The
7.	the year. This means that any outlet, if present is higher th $NO - go to 7$ YES - ThIs the entire wetland located in a very flat area with no ob pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet. $No - go to 8$ YES - Th	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. e wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The e wetland class is Depressional
	the year. This means that any outlet, if present is higher th NO – go to 7NO – go to 7YES – ThIs the entire wetland located in a very flat area with no ob- pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet. No – go to 8No – go to 8YES – ThYour wetland unit seems to be difficult to classify and probably co	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. we wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The e wetland class is Depressional ntains several different HGM classes. For example, seeps at the base of a
7.	the year. This means that any outlet, if present is higher th NO – go to 7 YES – Th Is the entire wetland located in a very flat area with no ob- pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – Th Your wetland unit seems to be difficult to classify and probably co slope may grade into a riverine floodplain, or a small stream within	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. e wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The e wetland class is Depressional
7.	the year. This means that any outlet, if present is higher th NO – go to 7 YES – Th Is the entire wetland located in a very flat area with no ob- pond surface water more than a few inches. The unit seen wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – Th Your wetland unit seems to be difficult to classify and probably co slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REC AREAS IN THE UNIT (make a rough sketch to help you decide).	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. e wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The e wetland class is Depressional ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the
7.	the year. This means that any outlet, if present is higher th NO – go to 7 YES – Th Is the entire wetland located in a very flat area with no obv pond surface water more than a few inches. The unit seen wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – Th Your wetland unit seems to be difficult to classify and probably co slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REC AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. e wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The e wetland class is Depressional ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the r wetland. NOTE: Use this table only if the class that is recommended in
7.	the year. This means that any outlet, if present is higher th NO – go to 7 YES – Th Is the entire wetland located in a very flat area with no ob- pond surface water more than a few inches. The unit seen wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – Th Your wetland unit seems to be difficult to classify and probably co slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REC AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your the second column represents 10% or more of the total area of the	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. we wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The <u>e wetland class is Depressional</u> ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the r wetland. NOTE: Use this table only if the class that is recommended in wetland unit being rated. If the area of the class listed in column 2 is less
7.	the year. This means that any outlet, if present is higher th NO – go to 7 YES – Th Is the entire wetland located in a very flat area with no ob- pond surface water more than a few inches. The unit seem wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES – Th Your wetland unit seems to be difficult to classify and probably co slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REC AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your the second column represents 10% or more of the total area of the than 10% of the unit, classify the wetland using the class that repre	hich water ponds, or is saturated to the surface, at some time of nan the interior of the wetland. e wetland class is Depressional vious depression and no overbank flooding. The unit does not as to be maintained by high groundwater in the area. The e wetland class is Depressional ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the r wetland. NOTE: Use this table only if the class that is recommended in wetland unit being rated. If the area of the class listed in column 2 is less sents more than 90% of the total area.
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Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor
) 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38
, 1	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.50
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	1
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	1
	outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation > = 95% of area points = 5	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of area	5
	 We than that persistent, ungrazed vegetation > = 1/10 of area	5
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	• Area seasonally ponded is $> 1/2$ total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	• Area seasonarry ponded is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	6
) 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. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplie
	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	-
	 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 	Multiplie X2
•	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	X2
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•	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>X2</u>
◆)3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion?	<u>X2</u> 12
◆) 3	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	<u>X2</u> 12
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◆ 03	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 TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	<u>X2</u> 12 (see p.40
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◆) 3		<u>X2</u> 12 (see p.46
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Wetland name or number 28C

D 4	4 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?		
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>		
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other 		
	YES multiplier is 2 NO multiplier is 1		
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	5	

Thes	se questi	ons apply to wetlands of all HGM classes.		Points
	HABIT	AT FUNCTIONS - Indicators that wetland functions to provide impo	ortant habitat.	(only 1 score per box)
H 1	Does th	ne wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class i 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.			
		$\frac{X}{If the unit has a forested class where shrubs have > 30\% cover)}{Forested (areas where trees have > 30\% cover)}$ $\frac{If the unit has a forested class check if:}{If the unit has a forested class has 3 out of 5 strata (canopy, sub-canopy, shows cover) that each cover 20% within the forested polygon.}$	arubs, herbaceous, moss/ground- ap of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0	1
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the w cover more than 10% of the wetland or 1/4 acre to count (see text for	vetland. The water regime has to	Figure
		Permanently flooded or inundated4 orSeasonally flooded or inundated3 orXOccasionally flooded or inundated2 typ	more types presentpoints = 3more types presentpoints = 2pes presentpoints = 1pe presentpoints = 0	2
	H 1.3	Richness of Plant Species(see p. 75):Count the number of plant species in the wetland that cover at least 1species can be combined to meet the size threshold)You do not have to name the species. Do not include Eurasian Milfoloosestrife, Canadian Thistle.If you counted: > 19 s $5-19$	10 ft ² (different patches of the same	1
	H 1.4	Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Coward the classes and unvegetated areas (can include open water or mudflats) is None = 0 points Low = 1 point Moderate = 2 points		Figure
		High = 3 points	Use map of Cowardin classes.	1
	High = 3 points High = 3 points High = 3 points 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 point you put into the next column.			
		H 1 TOTAL Score – potential for providing habitat	Add the points in the column above	5

Wetland name or number 28C

2Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
Н 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed undisturbed vegetated areas, rocky areas, or open water 50% circumference points = 4 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% circumference points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% circumference points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% circumference points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 95% circumference points = 3 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water 50% circumference points = 3 fbuffer does not meet any of the criteria above: No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2 No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 1 Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) p	
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects t estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	it o 1

II 2.2 Non an adjocant to other migrity helitate list die WDEW (see a 20) (
H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
a wet prairie (full descriptions in WDFW PHS report p. 161).	3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest and and $x \in m$ (20 ft) large	
end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points	
If we that has 2 priority habitats = 3 points If we that has 2 priority habitats = 3 points	
If we that has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	5
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
TOTAL for H 1 from page 8	5
• Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	13
Commonto	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
5C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Rating I/II
SC2	Natural Heritage Wetlands (see p. 87)Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This guestion is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)					
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	 and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i> Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW 					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
505	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.) YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)	0				
	$\mathbf{YES} = \mathbf{C} ategory \ \mathbf{I} \qquad \mathbf{NO} = \mathbf{C} ategory \ \mathbf{II}$	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	• Long Beach Peninsula lands west of SR 103					
	• Grayland-Westport lands west of SR 105					
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	C (H				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II				
	SC 0.2 is the wetand between 0.1 and 1 acre, of is it in a mosaic of wetands that is between 0.1 and 1 acre? YES = Category III	Cat III				
	Category of wetland based on Special Characteristics	Cat. III				
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1	NA				
	in you answered it of an types enter not appreable on p. 1	NA				

Wetland name or number 28D

	Version 2 – Updated	July 2006 to ind	RM – WESTERN WASHIN crease accuracy and reproducibility a w WDFW definitions for priority had	mong users		
Name of w	retland (if known): 28D			Date of site	visit: 09-2	7-13
Rated by: <u>(</u>	Colin Worsley / Matt Maynard Tr	ained by Ecol	logy? Yes <u>X</u> No <u>D</u>	ate of training	g: <u>11-2005 / 0</u>	4-2006
SEC:	<u>29</u> TOWNSHIP: <u>25N</u>	RANGE	E: 06E Is S/T/R in App	endix D? Ye	es N	lo <u>X</u>
	Map of wetland unit:	Figure	Estimated size <	:0.01 acre	_	
		SUMMA	ARY OF RATING			
Category	based on FUNCTIONS provided	by wetland:	I II	_ III	IV	X
	Category I = Score > 70		Score for Water Quality Fund	ctions	2	
	Category II = Score 51 - 69		Score for Hydrologic Fund		5	
	Category III = Score $30 - 50$		Score for Habitat Fund	ctions	9	
	Category IV = Score < 30		TOTAL Score for Fund	ctions	16	7
Category b	based on SPECIAL CHARACTER	ISTICS of W	etland I II	Does	not apply	X
	Final Cate	gory (choos	e the "highest" category from a	bove")	IV	7
			about the wetland unit.	Ŀ		
	Wetland Unit has Speci Characteristics		Wetland HGM Class used for Rating			
	Estuarine		Depressional	X		
	Natural Heritage Wetlan	d	Riverine			
	Bog		Lake-fringe			
	Mature Forest		Slope			
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal None of the above	X	Check if unit has multiple HGM classes present			
	vetland being rated meet any of the rest o		elow? If you answer YES to an			ou will
	Check List for Wetland (in addition to the protec	s that Need	Additional Protection		YES	NO
End For	the wetland unit been documented angered animal or plant species (7 the purposes of this rating system, e or federal database.	as a habitat j 7/E species)?	for any Federally listed Threate			Х

 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the

Х

Х

Х

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 in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic		
1.	Are the water levels in the entire unit usually controlled by		
	$\frac{NO - go to 2}{VES} - the wetland class is Ti$		
	If yes, is the salinity of the water during periods of an YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)	
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it	
		uarine in the first and second editions of the rating system are called Salt	
		Estuarine wetlands were categorized separately in the earlier editions, and	
		sistency between editions, the term "Estuarine" wetland is kept. Please	
	note, however, that the characteristics that define Category I a		
2.	The entire wetland unit is flat and precipitation is only sou	urce (>90%) of water to it. Groundwater and surface water	
	runoff are NOT sources of water to the unit. NO - go to 3 $YES - The vector$	wetland class is Flats	
	If your wetland can be classified as a "Flats" wetland,		
3.	Does the entire wetland meet both of the following criteria		
5.		ores of a body of permanent open water (without any	
	vegetation on the surface) where at least 20 a		
	At least 30% of the open water area is deeper		
		wetland class is Lake-fringe (Lacustrine Fringe)	
4.	Does the entire wetland meet all of the following criteria?		
	The wetland is on a slope (slope can be very ,		
	flow subsurface, as sheetflow, or in a swale v	lirection (unidirectional) and usually comes from seeps. It may without distinct banks	
	The water leaves the wetland without being		
		types of wetlands except occasionally in very small and	
		pressions are usually <3 ft diameter and less than 1 foot deep).	
NO – go to 5 YES – The wetland class is Slope			
5.	Does the entire wetland meet all of the following criteria?		
	· · · · · · · · · · · · · · · · · · ·	re it gets inundated by overbank flooding from that stream or	
river. The overbank flooding occurs at least once every two years. NOTE: The riverine unit can contain depressions that are filled with water when the river is not flo			
6.	Is the entire wetland unit in a topographic depression in whether the second se	hich water ponds, or is saturated to the surface, at some time of	
	the year. This means that any outlet, if present is higher th		
	NO – go to 7 YES – Th	e wetland class is Depressional	
7.	7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The		
	pond surface water more than a few inches. The unit seem		
	wetland may be ditched, but has no obvious natural outlet. No $-$ go to 8 YES $-$ Th	e wetland class is Depressional	
0			
8.		ntains several different HGM classes. For example, seeps at the base of a a depressional wetland has a zone of flooding along its sides GO	
	slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT		
		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		
		wetland unit being rated. If the area of the class listed in column 2 is less	
	than 10% of the unit, classify the wetland using the class that represent		
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating	
	Slope + Riverine	Riverine	
	Slope + Depressional	Depressional	
	Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional	
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional	
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special	
	freshwater wetland	characteristics	
If y	you are unable still to determine which of the above criteria	apply to your wetland, or you have more than 2 HGM classes	

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Depressional and Flat Wetlands	Points	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 scor per box)	
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38	
	D 1.1 Characteristics of surface water flows out of the wetland:		
	• Unit is a depression with no surface water leaving it (no outlet)	Figure	
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points $= 2$		
	 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	1	
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1		
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)		
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):		
	• Wetland has persistent, ungrazed vegetation > = 95% of area points = 5	Figure	
	 Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 	0	
	 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	0	
	Map of Cowardin vegetation classes		
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure	
	ponded. Estimate area as the average condition 5 out of 10 years.		
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 4		
	 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0	
	Map of Hydroperiods		
	Total for D 1Add the points in the boxes above	1	
) 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. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.		
	Grazing in the wetland or within 150 ft		
	Untreated stormwater discharges to wetland		
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed		
	fields, roads, or clear-cut logging		
	X Residential, urban areas, golf courses are within 150 ft. of wetland		
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	X2	
	YES multiplier is 2 NO multiplier is 1		
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>		
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>-</u>	
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46	
	D 3.1 Characteristics of surface water flows out of the wetland unit		
	• Unit is a depression with no surface water leaving it (no outlet) points = 4		
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 		
	outflow and no obvious natural outlet and/or outlet is a man-made ditch		
	(If ditch is not permanently flowing treat unit as "intermittently flowing")		
	• Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0		
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).		
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7		
	• The wetland is a "headwater" wetland		
	• The wetland is a "headwater" wetland	0	
	 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	0	
	 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 	0	
	 The wetland is a "headwater" wetlandpoints = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outletpoints = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outletpoints = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ftpoints = 0 	0	
	 The wetland is a "headwater" wetland	0	
	 The wetland is a "headwater" wetland		
	 The wetland is a "headwater" wetland	0	
	 The wetland is a "headwater" wetland		

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from	(see p. 49)	
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems.		
	YES multiplier is 2 NO multiplier is 1		
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	5	

Thes	se quest	ions apply to wetlands of all HGM classes.		Points
	HABI	CAT FUNCTIONS – Indicators that wetland functions to provide impo	rtant habitat.	(only 1 score per box)
H 1		he 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 Cowardi 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acre Aquatic Bed		Figure
		4 structures or more points = 4	rubs, herbaceous, moss/ground- p of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0	0
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the w	vetland. The water regime has to	Figure
		Seasonally flooded or inundated 3 or Occasionally flooded or inundated 2 typ	more types present points = 3 more types presentpoints = 2 pes presentpoints = 1 pe presentpoints = 0	1
		Freshwater tidal wetland = 2 points	Map of hydroperiods	
	H 1.3	<u>5 – 19</u>		1
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Coward the classes and unvegetated areas (can include open water or mudflats) is		
		None = 0 points Low = 1 point Low = 2 points Moderate = 2 points	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
			Use map of Cowardin classes.	
	(High = 3 points [riparian braided channels]		0
	H 1.5	Special Habitat Features (see p. 77):	our of chacks is the number of points	
		Check the habitat features that are present in the wetland. The number you put into the next column.	eter and 6 ft. long) nd hanging vegetation extends at least unit, for at least 33 ft. (10m) r or muskrat for denning ent (<i>cut shrubs or trees that have</i> ly branches are present in areas that <i>ving by amphibians</i>) stratum of plants	0
		H 1 TOTAL Score – potential for providing habitat	Add the points in the column above	2

Wetland name or number 28D

1 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points = 4 00m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 4 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = 4 95% circumference. points = 4 No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns	5 4 4 3 3 0 2 2 1 0 1
H 2.2	 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripariar or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are releast 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 ripariar or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	at 1 1 to

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (full descriptions in WDFW PHS report p. 158).	
<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	2
a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).	3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDEW are not $n_{1} = 167$, 160 , and a logarity in Armon dia A	
<i>WDFW report: pp. 167-169 and glossary in Appendix A).</i> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are $> 2 \text{ m}$ (6.5 ft) in height. Priority logs are $> 30 \text{ cm}$ (12 in) in diameter at the largest	
end, and > 6 m (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p. 84)	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	2
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within $1/2$ milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	7
TOTAL for H 1 from page 8	2
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	9

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
5C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	Cat. I
	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 <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

	and name of number <u>28D</u>				
SC4	Forested Wetlands (see p. 90)				
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests : (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland. The wetlend is larger than $1/10$ core (4250 course ft.)	Cat. I			
		C (H			
		Cat. II			
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? YES = Category II NO = go to SC 6.2				
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	NA			
	If you answered NO for all types enter "Not Applicable" on p. 1				

Wetland name or number 28E

	Version 2 – Updated J	uly 2006 to i	DRM – WESTERN WASH ncrease accuracy and reproducibilit new WDFW definitions for priority	y among users	
Name of	wetland (if known): 28E			Date of si	te visit: <u>11-01-13</u>
Rated by	v: <u>Colin Worsley / Matt Maynard</u> Trai	ined by Ec	ology? Yes <u>X</u> No	Date of traini	ing: <u>11-2005 / 04-2006</u>
SEC:	29 TOWNSHIP: 25N	RANG	E: <u>06E</u> Is S/T/R in A	Appendix D?	YesNoX
			Estimated s		
		SUMM	ARY OF RATING		
Categor	y based on FUNCTIONS provided b	y wetland	: I II	III	IV <u></u>
	Category I = Score > 70		Score for Water Quality F	unctions	8
	Category II = Score 51 - 69		Score for Hydrologic Functions 9		
	Category III = Score 30 – 50		Score for Habitat F	unctions	8
	Category IV = $Score < 30$	TOTAL Score for F	unctions	25	
Category	y based on SPECIAL CHARACTERIS	STICS of V	Vetland I II	Do	es not apply X
Cutcgor	Final Categ	ory (choo	ose the "highest" category from		IV
	Wetland Unit has Specia Characteristics	1	Wetland HGM Class used for Rating		
	Estuarine		Depressional	X	
	Natural Heritage Wetland		Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope		
	Old Growth Forest Coastal Lagoon		Flats Freshwater Tidal		
	Interdunal		FICSHWALLT HUAI		
	None of the above	X	Check if unit has multiple HGM classes present		

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

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

Classification of Vegetated Wetlands for Western Washington

If the hydrologic criteria listed in each question do not apply multiple HGM classes. In this case, identify which hydrolog	to the entire unit being rated, you probably have a unit with gic criteria in questions 1-7 apply, and go to Question 8.
YES – Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fri is rated as an Estuarine wetland. Wetlands that were call Water Tidal Fringe in the Hydrogeomorphic Classification	Tidal Fringe annual low flow below 0.5 ppt (parts per thousand)? NO – Saltwater Tidal Fringe (Estuarine) inge use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it estuarine in the first and second editions of the rating system are called Salt . Estuarine wetlands were categorized separately in the earlier editions, and onsistency between editions, the term "Estuarine" wetland is kept. Please
	source (>90%) of water to it. Groundwater and surface water
runoff are NOT sources of water to the unit. NO – go to 3 YES – Th	e wetland class is Flats
If your wetland can be classified as a "Flats" wetlan	
vegetation on the surface) where at least 20 At least 30% of the open water area is deep	shores of a body of permanent open water (without any) acres (8ha) in size;
4. Does the entire wetland meet all of the following criteria	
The wetland is on a slope (slope can be ver The water flows through the wetland in one flow subsurface, as sheetflow, or in a swale The water leaves the wetland without bein NOTE: Surface water does not pond in the shallow depressions or behind hummocks (<i>ry gradual</i>). e direction (unidirectional) and usually comes from seeps. It may e without distinct banks.
5. Does the entire wetland meet all of the following criteria	
river. The overbank flooding occurs at least once NOTE: <i>The riverine unit can contain depr</i> <u>NO – go to 6</u> YES – Th	here it gets inundated by overbank flooding from that stream or e every two years. <i>Tessions that are filled with water when the river is not flooding.</i> . The wetland class is Riverine which water ponds, or is saturated to the surface, at some time of
the year. This means that any outlet, if present is higher	
7. Is the entire wetland located in a very flat area with no c pond surface water more than a few inches. The unit see wetland may be ditched, but has no obvious natural outl	by b
	contains several different HGM classes. For example, seeps at the base of a
slope may grade into a riverine floodplain, or a small stream wit BACK AND IDENTIFY WHICH OF THE HYDROLOGIC R AREAS IN THE UNIT (make a rough sketch to help you decid rating system if you have several HGM classes present within you	hin a depressional wetland has a zone of flooding along its sides. GO REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT e). Use the following table to identify the appropriate class to use for the our wetland. NOTE: Use this table only if the class that is recommended in he wetland unit being rated. If the area of the class listed in column 2 is less
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional
Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics
	ia apply to your wetland, or you have more than 2 HGM classes
within a wetland boundary, classify the wetland as Depressi	onal for the rating.

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 sco per box)
) 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
, T	D 1.1 Characteristics of surface water flows out of the wetland:	(500 p.0.)
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 	3
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	I Igui e
	 Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes 	5
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	 Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	0
	• Area seasonarry ponded is < 1/4 total area of wetland	
	Total for D 1Add the points in the boxes above	8
) 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 4
	 may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other 	Multipli X1
	YES multiplier is 2 NO multiplier is 1	
♦	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	8
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	_
) 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.4
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	4
	 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	 Marks of ponding between 2 it. to < 5 ft. ito is unface of bottom of outlet	

Wetland name or number 28E

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)	
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>		
	 Wetland drains to 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		
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	9	

Thes	se questi	ons apply to wetlands of all HGM classes.		Points
	HABIT	AT FUNCTIONS – Indicators that wetland functions to provide impo	rtant habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?			
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardi 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres		Figure
		4 structures or more points = 4 2 structures points = 1	arubs, herbaceous, moss/ground- ap of Cowardin vegetation classes 3 structures	0
	H 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the w	vetland. The water regime has to	Figure
		cover more than 10% of the wetland or 1/4 acre to count (see text for Permanently flooded or inundated 4 or Seasonally flooded or inundated 3 or Occasionally flooded or inundated 2 type	r descriptions of hydroperiods). more types present points = 3 more types presentpoints = 2 pes presentpoints = 1 pe presentpoints = 0	0
	Н 1.3	<u>Richness of Plant Species</u> (see p. 75):		
		Count the number of plant species in the wetland that cover at least 1species can be combined to meet the size threshold)You do not have to name the species. Do not include Eurasian Milfoloosestrife, Canadian Thistle.If you counted: >19 sp $5-19$		0
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Coward the classes and unvegetated areas (can include open water or mudflats) is		
		None = 0 points Low = 1 point $Moderate = 2 points$	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
			Use map of Cowardin classes.	
	(High = 3 points [riparian braided channels]		0
	H 1.5	Special Habitat Features (see p. 77):		
		 Check the habitat features that are present in the wetland. The number you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diamed Standing snags (diameter at the bottom > 4 inches) in the wetlat Undercut banks are present for at least 6.6 ft. (2m) and/or overla 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the or Stable steep banks of fine material that might be used by beave (> 30 degree slope) OR signs of recent beaver activity are present or yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or wood are permanently or seasonally inundated (structures for egg-lay Invasive plants cover less than 25% of the wetland area in each NOTE: The 20% stated in early printings of the manual on page 	eter and 6 ft. long) nd hanging vegetation extends at least unit, for at least 33 ft. (10m) r or muskrat for denning ent (<i>cut shrubs or trees that have</i> ly branches are present in areas that <i>ving by amphibians</i>) s stratum of plants	0
		H 1 TOTAL Score – potential for providing habitat	Add the points in the column above	0

Wetland name or number 28E

H 2 D	oes the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 scor per box)
F	2.1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	Figure
F	 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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point Within 1 mile of a lake greater than 20 acres? 	1

descriptions of WDFW priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the combondbublishicatum) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the combondbublishicatum to be relatively undisturbed. Aspen Standis: Pare or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlik (all descriptions in WDFW PHS report p. 152). Herbaccous Badds: Variable size paches of grass and forbs on shallow soils over bedrock. Old growth/Matter (forests): (Old growth west of Cascade crest) Stands of at least 21 tree species, forming a multi-layered canopy with occusional small openings: with at least 20 trees/hu (8 trees/acre) > 81 mon (32 in) dbb; crown ever may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years of west 10 the Cascade crest). Oregon white Oak: Woodlands Stands of pure oak or adk/conffer associations where canopy coverage of the oak component is inportunif (<i>ull descriptions in WDPW PHB report p. 159</i>). K Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terretrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>ull descriptions in tho DPW PHS report p. 159</i>). X. Instream: The combination of physical, biological, and chemical			
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 4 points If wetland has 1 priority habitats = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4) H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile		 http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 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 than that found in old-growth; 80 - 200 years of west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). 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. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitatis and the definition of relatively undisturbed are in WDFW Prepor</i>	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 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed		If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
TOTAL for H 1 from page 8		 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
TOTAL for H 1 from page 8		H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
			0
Add the points for 11 and 11 2, then record the result on p. 1			8
Comments:	• Corr		

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
5C1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species	Cat. I
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Cat. II Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This question is used to screen out most sites before you need to contact WNHP/DNR.</i>) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NOX	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
505	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \text{Category II}$	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
500	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
1	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number 29B

Version 2 – Updated J	uly 2006 to incr	M – WESTERN WASE ease accuracy and reproducibility WDFW definitions for priority	ty among users		
Name of wetland (if known): 29B			Date of s	ite visit: 03-	20-14
Rated by: <u>Colin Worsley / Matt Maynard</u> Tra	ined by Ecolo	ogy? Yes <u>X</u> No	Date of training	ng: <u>11-2005</u> /	04-2006
EC: 29 TOWNSHIP: 25N	RANGE:	06E Is S/T/R in A	Appendix D?	Yes	No X
		Estimated size			
	SUMMAI	RY OF RATING			
Category based on FUNCTIONS provided b	y wetland: 1	I II	III	IV	X
Category I = Score > 70		Score for Water Quality F	unctions	2	
Category II = Score 51 - 69		Score for Hydrologic F	unctions	0	
Category III = Score $30 - 50$		Score for Habitat F	unctions	5	
Category IV = $\text{Score} < 30$		TOTAL Score for F		7	
	STCS of Wod				v
Category based on SPECIAL CHARACTERIS				es not apply IV	
Final Categ	Ory (choose	the "highest" category from	m above")	1 V	
		about the wetland unit.			
Wetland Unit has Specia Characteristics	ıl	Wetland HGM Class used for Rating			
Estuarine		Depressional			
Natural Heritage Wetland	1	Riverine			
Bog		Lake-fringe			
Mature Forest		Slope	X		
Old Growth Forest		Flats			
Coastal Lagoon		Freshwater Tidal			
Interdunal					
None of the above	X	Check if unit has multiple HGM classes present			
Does the wetland being rated meet any of th	e criteria hel	· · · ·	any of the qu	estions below	you will

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		х
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		Х
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4.	<i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 8

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	NO – go to 2 YES – the wetland class is Tid	
	If yes, is the salinity of the water during periods of ann	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine) use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		arine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and
		stency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and	d II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is only sour	ce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	
		vetland class is Flats
2	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	? ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 ac	
	At least 30% of the open water area is deeper	
		retland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	<u>X</u> The wetland is on a slope (slope can be very ga	
		rection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	X The water leaves the wetland without being in	types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		vetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		e it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once ev	
		ions that are filled with water when the river is not flooding
6.		ich water ponds, or is saturated to the surface, at some time of
0.	the year. This means that any outlet, if present is higher that	
		e wetland class is Depressional
7.		ious depression and no overbank flooding. The unit does not
	pond surface water more than a few inches. The unit seems	
	wetland may be ditched, but has no obvious natural outlet.	
	No – go to 8 YES – The	wetland class is Depressional
8.		tains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	
		IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in
		vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represent	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
TC	freshwater wetland	characteristics

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
S 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance) points = 3 • Slope is 1% - 2% • Slope is 2% - 5%	
	 Slope is greater than 5%	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants	Figure
	 are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland areapoints = 6 Dense, uncut, herbaceous vegetation > 1/2 of areapoints = 3 Dense, woody, vegetation > 1/2 of areapoints = 2 Dense, uncut, herbaceous vegetation > 1/4 of areapoints = 1 Does not meet any of the criteria above for vegetationpoints = 0 	0
	Aerial photo or map with vegetation polygons	
	Total for S 1 Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	(see p. 67)
	Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland X Residential, urban areas, or golf courses are within 150 ft. upslope of wetland	Multiplier
	Other VES multiplier is 2 NO multiplier is 1	<u>X2</u>
	TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	2
•	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	L
S 3	Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
5 3	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland (stems of plants should be thick enough (usually > 1/8in), or dense enough to remain erect during surface flows). Dense, uncut, rigid vegetation covers > 90% of the area of the wetland points = 6 Dense, uncut, rigid vegetation> 1/2 area of wetland 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 	0
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	0
	Add the points in the boxes above	0
S 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note</i> <i>which of the following conditions apply.</i> Wetland has surface runoff that drains to a river or stream that has flooding problems	(see p. 70) Multiplier
	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	<u>X1</u>
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4; then <i>add score to table on p. 1</i>	0

Comments: Wetland A is adjacent to estuarine wetland but separate in that Wetland A is not influenced by salt water. Freshwater flows through Wetland A in one direction and enters North Bay.

	se questi	ions apply to wetlands of all HGM classes.	Points
	HABIT	CAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 sco per box)
H 1	Does t	he wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.	Figure
		If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 Map of Cowardin vegetation classes 3 structures points = 0	0
	Н 1.2	<u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure
		Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 0 Permanently flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Map of hydroperiods Freshwater tidal wetland 2 points Map of hydroperiods	0
	Н 1.3	Richness of Plant Species (see p. 75): Map of hydroperious	
		Interformed provide provi	1
	H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
		Note: If you have 4 or more classes	Figuro
		None = 0 pointsLow = 1 pointModerate = 2 pointsor 3 vegetation classes and open water, the rating is always "high".	rigure _
	(None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high". Use map of Cowardin classes. Ise map of Cowardin classes.	
	H 1.5	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high". Image: Special Habitat Features (see p. 77): Image: Special Habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Image: Special Habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Image: Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Image: Standing snags (diameter at the bottom > 4 inches) in the wetland Standing vegetation extends at least 3.3 ft. (10m) over a stream (or ditch) in, or contiguous with the unit, for at least 3.3 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning	. 0
	H 1.5	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high". Image: None = 0 points Low = 1 point Moderate = 2 points Use map of Cowardin classes. Image: None = 0 points Image: None = 0 points Low = 1 point Moderate = 2 points Use map of Cowardin classes. Image: None = 0 points Use map of Cowardin classes. Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Special Habitat Features (see p. 77): Image: None = 0 points Image: None = 0 points Image: None = 0 points Special Habitat features that are present in the wetland. Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points Image: None = 0 points </td <td>0</td>	0

Wetland name or number 29B

H 2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed" 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
H 2.2		it o 1

 Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW PW report: pp. 167-169 and glossary in Appendix A</i>). Cavee: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geologica		 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. Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points
 fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. 		
 fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>). Instream: The combination of physical, biological, and chemical processes and conditions that interact to 		 Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
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fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).		 Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II	Cat. I
	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 <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	 with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO not a Heritage Wetland	Cat I
SC3	 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of 	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	Forested Wetlands (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I NO = \underline{X} not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
505	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	Cut. I
	$\mathbf{YES} = \mathbf{C} ategory I \qquad \mathbf{NO} = \mathbf{C} ategory II$	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
~~~	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	<b>YES</b> = Go to SC 6.1 <b>NO</b> <u>X</u> not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	C ( H
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II
	SC 0.2 is the wetand between 0.1 and 1 acre, of is it in a mosaic of wetands that is between 0.1 and 1 acre? YES = Category III	Cat III
	Category of wetland based on Special Characteristics	Cat. III
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered <b>NO</b> for all types enter "Not Applicable" on p. 1	NT A
	in you answered we for an types enter 100 Applicable on p. 1	NA

Wetland name or number 29C

	Version 2 – Updated July	2006 to inc	<b>RM – WESTERN WASHIN</b> crease accuracy and reproducibility am w WDFW definitions for priority habi	ong users		
Name of wetland	(if known): <b>29C</b>			_ Date of si	te visit: <u>03</u>	-20-14
Rated by: Colin	Worsley / Matt Maynard T	rained by	Ecology? Yes X No D	ate of traini	ng: <u>11-2005 /</u>	04-2006
SEC: 29	TWNSHP: 25N	RNGE:	06E Is S/T/R in Appe	endix D? Ye	es N	lo <u>X</u>
	Map of wetland unit: Fi	gure	<b>Estimated size</b> 0.0	05 acre		
	•				-	
Catagory based	THINGTIONS monthed by		ARY OF RATING		v <b>T</b>	
Category based o	on FUNCTIONS provided by	wettand:	I II	_ 1112	<u> </u>	
Cat	tegory I = Score $> 70$		Score for Water Quality Funct	ions	18	
Cate	egory II = Score 51 - 69		Score for Hydrologic Funct	ions	12	
Cate	gory III = Score $30 - 50$		Score for Habitat Funct	ions	15	
Cate	gory IV = Score < 30		TOTAL Score for Funct	ions	45	
Category based o	n SPECIAL CHARACTERIST	CS of We	tland I II	Does	not apply <u>X</u>	
	Final Catego	<b>rv</b> (choos	se the "highest" category from ab	ove")	III	
	C	•				
	Summary of basic inf Wetland Unit has Special	ormation	about the wetland unit. Wetland HGM Class			
	Characteristics		used for Rating			
	Estuarine		Depressional			
	Natural Heritage Wetland Bog		<b>Riverine</b> Lake-fringe	X		
	Mature Forest		Slope	(X)		
	Old Growth Forest		Flats	()		
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	X	Check if unit has multiple HGM classes present	Х		
			elow? If you answer YES to any garding the special characteristics			ou will
	Check List for Wetlands th				YES	NO
	(in addition to the protection			1		
			for any Federally listed Threaten	ed or		
For the pur	<i>d</i> animal or plant species ( <i>T/E</i> poses of this rating system, "do leral database.		" means the wetland is on the ap	propriate		Х
			r any State listed Threatened or			
			is rating system, "documented" i Wetlands with State listed plant			Х

 are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
 SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
 X

 SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.
 X

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 8

# **Classification of Vegetated Wetlands for Western Washington**

If the hydrologic criteria listed in each question de not apply to the entire unit heing rated, you probably heave a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8. I. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO go to 2 YES — the water during periods of annual low flow helve 0.5 ppt (parts per thousand)? If yes, is the sulfnity of the water during periods of annual low flow helve 0.5 ppt (parts per thousand)? If yes revelued can be classified as a Freshwater Tidal Fringe NO - Sattwater Tidal Fringe (Estuarrise) If your werland can be classified as a Freshwater Tidal Fringe in the Hydrogenorphic Classification. Estuarine werlands were categorized separately in the ardier editions, and this separation is being been the hydrogenorphic Classification. Estuarine werlands were categorized separately in the ardier editors, and this separation is being been that the vere call second editors, the entir "Estuarine" wetland werland earlier editors. The entire wetland must flat and precipitation is only score (>90%) of water to it. Groundwater and sufface water ranoff are NOT sources of water to the unit. NO = pot o3 VES — The wetland can be classified as a "Flats" wetland class is Flats If your wetland can be classified as a "Flats" wetland class is Lake-Fringe (Lacustrine Fringe) 4. Does the entire wetland meter all of the following criteria? NO = pot to 4 YES — The wetland the set is a deper than 6.6 (2 m)? NO = pot to 4 YES — The wetland the set is a deper than 6.6 (2 m)? NO = pot to 4 YES — The wetland class is Lake-Fringe (Lacustrine Fringe) 4. Does the entire wetland meet all of the following criteria? Mo = pot to 5 YES — The wetland class is Norther NO = pot to 5 YES — The wetland the set is obsport of the set so is sourded? <th></th> <th></th> <th></th>			
NO         got of 2         YES - the wethand 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 in the distribution of the sality software real extraines in the first and second editions of the rating system are called Salit.           If your wethand can be classified as a Freshwater Tidal Fringe use the forms for the were categorized segmatch in the caller callinos, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine wethand is kept. Please enote, however, that the characteristics that addine (Category 1 and II estuarine wethand have changed (eep			
<ul> <li>If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?</li> <li>If your welland can be classified as a <i>Treshwater Tidal Fringe NO - Saltwater Tidal Fringe (Estuarine)</i></li> <li>If your welland can be classified as a <i>Treshwater Tidal Fringe use the forms for Riverine wellands</i>. If it as a Subwater Tidal Fringe in the service wellands that were calle standare in the first and second eductions of the rating are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wellands have changed (see p).</li> <li>The entire welland unit is flat and precipitation is only source (&gt;90%) of water to it. Groundwater and surface water ranoff are NOT sources of water to the unit.</li> <li>NO - go to 3</li> <li>VES - The wetland class is Flats</li> <li>If your welland can be classified as a "Flats" wetland, use the form for Depressional wetlands.</li> <li>Does the entric wetland meet both of the following criteria?</li> <li></li></ul>	1.		
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vegetation on the surface) where at least 20 acres (8ha) in size;	3.		
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<ul> <li>4. Does the entire wetland meet all of the following criteria?         <ul> <li>The wetland is on a slope (slope can be very gradual).</li> <li>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.</li> <li>The water leaves the wetland without being impounded?</li> </ul> </li> <li>NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually &lt;3 ft diameter and less than 1 foot deep). NO - go to 5</li> <li>YES - The wetland class is Slope</li> <li>5. Does the entire wetland meet all of the following criteria?                 <ul></ul></li></ul>			
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NOTE:         The riverine unit can contain depressions that are filled with water when the river is not flooding           NO - go to 6         YES - The wetland class is Riverine           6.         Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.           NO - go to 7         YES - The wetland class is Depressional           7.         Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.           No - go to 8         YES - The wetland class is Depressional           8.         Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated         HGM Class to Use in Rating           Slope + Riverine         Riverine         Riverine         Slope </td <td></td> <td></td> <td></td>			
NO - go to 6         YES - The wetland class is Riverine           6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland. NO - go to 7         YES - The wetland class is Depressional           7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet. No - go to 8         YES - The wetland class is Depressional           8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland unit being rated         HGM Classes to Use in Rating           Slope + Riverine         Biope + Riverine         Biope + Riverine         Biope + Riverine           Slope + Depressional         Depressional         Depressional         Bepressio			
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freshwater wetland characteristics			
			-
	If y		apply to your wetland, or you have more than 2 HGM classes

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

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

L	Lake-fringe Wetlands	Points
<b>T</b> 1	WATER QUALITY FUNCTIONS – Indicators that the wetland unit functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland unit have the <u>potential</u> to improve water quality? (see p.59)	per box)
	<ul> <li>L 1.1 Average width of vegetation along the lakeshore (use polygons of Cowardin classes):</li> <li>Vegetation is more than 33 ft. (10m) wide</li></ul>	Figure
	<ul> <li>Vegetation is more than 6 ft. (2m) wide and &lt; 16 ft</li></ul>	6
	L 1.2 Characteristics of the vegetation in the wetland: <i>Choose the appropriate description that results in the highest</i>	
	points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is	Figure
	<ul> <li>total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.</li> <li>Cover of herbaceous plants is &gt; 90% of the vegetated area</li></ul>	3
	• Aquatic bed cover and open water $> 2/3$ of the unit	
	Map with polygons of different vegetation types	
L 2	Add the points in the boxes above           Does the wetland have the opportunity to improve water quality?	9 (see p.61)
1. 2	Answer YES if you know or believe there are pollutants in the lake water, or polluted surface water flowing through the unit to the lake. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Polluted water discharges to wetland along upland edge Tilled fields or orchards within 150 ft.	(500 pro1)
	X       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	Multiplier
	<b>YES</b> multiplier is 2 <b>NO</b> multiplier is 1	
•	<b><u>TOTAL</u></b> – Water Quality Functions Multiply the score from L1 by L2; then <i>add score to table on p. 1</i>	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	-
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.62)
	<ul> <li>L 3 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (<i>choose the highest scoring description that matches conditions in the wetland</i>)</li> <li>3/4 of distance is shrubs or forest at least 33 ft. (10m) wide</li></ul>	Figure
	<ul> <li>3/4 of distance is shrubs of forest at least 6 ft. (2m) wide</li></ul>	6
	Record the points in the boxes above	6
L 4	<b>Does the wetland have the <u>opportunity</u> to reduce erosion?</b> Are there features along the shore that will be impacted if the shoreline erodes? <i>Note which of the following</i>	(see p. 64)
	<ul> <li><i>conditions apply.</i></li> <li>X There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion.</li> <li>There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests, other wetlands) that can be damaged by shoreline erosion.</li> <li>Other</li></ul>	Multiplier
	YES multiplier is 2     NO multiplier is 1	
	<b><u>TOTAL</u> – Hydrologic Functions</b> Multiply the score from L3 by L4; then <i>add score to table on p. 1</i>	12

Comments: Deck, shed, and walkways in wetland.

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants	Figure
	<ul> <li>Enclose plants</li> <li>Scrub/shrub (areas where shrubs have &gt; 30% cover)</li> <li>X Forested (areas where trees have &gt; 30% cover)</li> <li>If the unit has a forested class check if:</li> <li>X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.</li> </ul>	1
	Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1Map of Cowardin vegetation classes 3 structures points = 2 1 structure 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 1/4 acre to count (see text for descriptions of hydroperiods).         Permanently flooded or inundated       4 or more types present points = 3 3 or more types presentpoints = 2	Figure
	Occasionally flooded or inundated       2 types presentpoints = 1         Saturated only       1 type presentpoints = 0         Permanently flowing stream or river in, or adjacent to, the wetland         Seasonally flowing stream in, or adjacent to, the wetland         X       Lake-fringe wetland	2
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3       Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.         If you counted:       > 19 species	1
	H 1.4 Interspersion of Habitats ( <i>see p. 76</i> ): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes	Figure
	None = 0 points $Low = 1$ point $Moderate = 2$ points $Low = 1$ point $Moderate = 2$ points $Low = 1$ point $Moderate = 2$ points $Low = 1$ point $Low = 1$ point $Low = 1$ point $Moderate = 2$ points $Low = 1$ point $Low = 1$ point $Low = 1$ point $Moderate = 2$ points $Low = 1$ point	
	Use map of Cowardin classes.	. 0
	H 1.5 <u>Special Habitat Features</u> (see p. 77):	
	<ul> <li>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.</li> <li>X Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)</li> <li>X Standing snags (diameter at the bottom &gt; 4 inches) in the wetland</li> <li>Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)</li> <li>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)</li> <li>At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)</li> <li>X Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.</li> </ul>	3
	H 1 TOTAL Score – potential for providing habitat       Add the points in the column above	7

Wetland name or number 29C

2 Does	the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sc per box
H 2.1	Buffers (see P. 80):         Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".         100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water         > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	1
H 2.2	Arial photo showing buffers         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 a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).         YES = 4 points (go to H 2.3)       NO = go to H 2.2.2         H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?         YES = 2 points (go to H 2.3)       NO = go to H 2.2.3         H. 2.2.3 Is the wetland:       • Within 5 mi (8km) of a brackish or salt water estuary OR         • Within 3 miles of a large field or pasture (> 40 acres) OR       YES = 1 point	t 0 1

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	
	descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
	http://wdfw.wa.gov/hab/phslist.htm )	
	Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
	NOTE: the connections do not have to be relatively undisturbed.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
	fish and wildlife (full descriptions in WDFW PHS report p. 152).	
	Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
	multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
	dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
	cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
	generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	oak component is important (full descriptions in WDFW PHS report p. 158).	
	<u>X</u> <b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	terrestrial ecosystems which mutually influence each other.	
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
	a wet prairie (full descriptions in WDFW PHS report p. 161).	3
	X Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
	provide functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
	and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	<b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	<b> Snags and Logs:</b> Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in wastern Washington and are $\gtrsim 2 \text{ m}$ (6.5 ft) in height Dright Dright large are $\gtrsim 20 \text{ cm}$ (12 in) in diameter at the largest	
	western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.	
	If we that $3 \text{ or more}$ priority habitats = 4 points	
	If we land has 2 priority habitats = 3 points	
	If we that has 2 priority habitat = 1 point No habitats = 0 points $1$ priority habitat = 1 point	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
	addressed in question H 2.4)	
	H 2.4 <u>Wetland Landscape</u> : Choose the <b>one</b> description of the landscape around the wetland that best fits (see p. 84)	
	<ul> <li>There are at least 3 other wetlands within 1/2 mile, and the connections between them are</li> </ul>	
	• There are at least 5 other wetlands within 1/2 inne, 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	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5	
		3
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	
	disturbedpoints = 3	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within $1/2$ milepoints = 3	
	• There is at least 1 wetland within 1/2 milepoints = 2	
	• There are no wetlands within 1/2 milepoints = 0	
	<b>H 2</b> TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	8
	TOTAL for H 1 from page 8	7
٠	Total Score for Habitat FunctionsAdd the points for H 1 and H 2; then record the result on p. 1	15
C		

# CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
-	criteria are met.	
SC1	Estuarine wetlands? (see p.86)         Does the wetland unit meet the following criteria for Estuarine wetlands?         The dominant water regime is tidal,         Vegetated, and         With the set of the 0.5 min.	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?         YES = Category I         NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	<b>YES</b> = Category I <b>NO</b> = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	The workator is relatively undistance (nas he of king, unterline, cut with all planting, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
	<ul> <li>At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87)           Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.)       (This question is used to screen out most sites before you need to contact WNHP/DNR.)         S/T/R information from Appendix D or accessed from WNHP/DNR web site       YES Contact WNHP/DNR (see p. 79) and go to SC 2.2	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?           YES = Category 1         NO not a Heritage Wetland	Cat I
SC3	Bogs (see p. 87)	
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the</i>	
	<ul> <li>wetland based on its function.</li> <li>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2</li> </ul>	
	<ul> <li>2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?</li> <li>YES = go to question 3</li> <li>NO = is not a bog for purpose of rating</li> </ul>	
	<ul> <li>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?</li> <li>YES = Is a bog for purpose of rating</li> </ul>	
	<ul> <li>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.</li> <li>4. Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western</li> </ul>	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

wet.		
SC4	<b>Forested Wetlands</b> (see p. 90)	
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	<b>Old-growth forests</b> : (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	<b>YES</b> = Category I <b>NO</b> = $X$ not a forested wetland with special characteristics	Cal. I
a a =	$\frac{\mathbf{W} = \mathbf{W} $	
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon ( <i>needs to be measured near the</i>	
	bottom.)	
	<b>YES</b> = Go to SC 5.1 <b>NO</b> <u>X</u> not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	Cut: I
	$\mathbf{YES} = \mathbf{C} \text{ategory I} \qquad \mathbf{NO} = \mathbf{C} \text{ategory II}$	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	<b>YES</b> = Go to SC 6.1 <b>NO</b> <u>X</u> not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	<ul> <li>Long Beach Peninsula lands west of SR 103</li> <li>Grayland-Westport lands west of SR 105</li> </ul>	
	<ul> <li>Orayland-westport lands west of SR 105</li> <li>Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul>	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	<b>YES</b> = Category II <b>NO</b> = go to SC $6.2$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cutt 11
1	<b>YES</b> = Category III	Cat. III
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered <b>NO</b> for all types enter "Not Applicable" on p. 1	NA

Wetland name or number 29D

	Version	2 - Updated July	y 2006 to inc	rease accuracy	<b>TERN WASH</b> and reproducibility itions for priority h	among users		
Name of w	wetland (if known): <u>2</u>	9D				Date of site	e visit: <u>09-2</u>	7-13
Rated by:	Colin Worsley / Matt M	aynard Traine	ed by Ecolo	ogy? Yes	<u>X</u> No	Date of trainir	ng: <u>11-2005 / (</u>	4-2006
SEC:	29 TOWNSH	IIP: <u>25N</u>	RANGE:	06E	Is S/T/R in A	ppendix D? Y	es N	lo <u>X</u> _
	Map of wet	tland unit: Fi	gure		Estimated size	0.03 acre	_	
			SUMMA	RY OF RAT	ING			
Category	based on FUNCTIONS	5 provided by	wetland:	I	II	III	IV	X
	Category I = Score	e > 70		Score for W	Vater Quality Fu	nctions	12	
	Category II = Score	e 51 - 69		Score fo	r Hydrologic Fu	nctions	1	
	Category III = Score	e 30 – 50		Scor	e for Habitat Fu	nctions	12	
	Category IV = Score	e < 30		TOT	AL Score for Fu	nctions	25	1
Category	based on SPECIAL CHA	ARACTERIST	TCS of We	tland I	II	Doe	s not apply	X
	Fin	al Catego	<b>ry</b> (choose	e the "highest	" category from	above")	IV	
	Summa	ry of basic inf	formation	about the w	etland unit	L		
	Wetland Unit Charact	t has Special		Wetlan	d HGM Class			
	Estuarine			Depression		X		
	Natural Herita	ige Wetland		Riverine				
	Bog			Lake-fring	je			
	Mature Forest			Slope		(x)		
	Old Growth Fo			Flats Freshwate	- Tidal			
	Coastal Lagoor Interdunal	11		Fleshwate				
	None of the abo	ove	X	Check if un HGM class	nit has multiple es present	Х		
	wetland being rated me otect the wetland accord			low? If you	answer YES to a			ou will
	Check List for (in addition to						YES	NO
Enc For	s the wetland unit been d dangered <b>animal or plan</b> the purposes of this rati- e or federal database.	locumented as at species (T/E	a habitat fo species)?	or any Feder	ally listed Threa			Х

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the

Х

Х

Х

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 in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

# **Classification of Vegetated Wetlands for Western Washington**

	Clussification of Vegetated We	
	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	$\frac{NO - go \text{ to } 2}{YES} - \text{the wetland class is Tie}$	
	If yes, is the salinity of the water during periods of and	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for <b>Riverine</b> wetlands. If it is a Saltwater Tidal Fringe it narine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and
		istency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I ar	
2.	The entire wetland unit is flat and precipitation is only sou	
	runoff are NOT sources of water to the unit.	
	$\frac{NO - go \text{ to } 3}{YES} - The v$	vetland class is <b>Flats</b>
_	If your wetland can be classified as a "Flats" wetland,	use the form for <b>Depressional</b> wetlands.
3.	Does the entire wetland meet both of the following criteria	?
		ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 ac	
	At least 30% of the open water area is deeper	
		vetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope ( <i>slope can be very</i> g	
	flow subsurface, as sheetflow, or in a swale w	irection (unidirectional) and usually comes from seeps. It may
	The water leaves the wetland <b>without being i</b>	
		types of wetlands except occasionally in very small and
		pressions are usually $<3$ ft diameter and less than 1 foot deep).
		vetland class is <b>Slope</b>
5.	Does the entire wetland meet all of the following criteria?	
		e it gets inundated by overbank flooding from that stream or
	river.	
	The overbank flooding occurs at least once ev	
		<i>tions that are filled with water when the river is not flooding</i> vetland class is <b>Riverine</b>
_		
6.	Is the entire wetland unit in a topographic depression in we the year. This means that any outlet, if present is higher th	hich water ponds, or is saturated to the surface, at some time of
	$\frac{1}{NO - go to 7}$ <b>YES</b> – The	an me menor of me wetland.
7		
7.	pond surface water more than a few inches. The unit seem	ious depression and no overbank flooding. The unit does not
	wetland may be ditched, but has no obvious natural outlet.	s to be maintained by high groundwater in the area. The
		e wetland class is Depressional
8.		tains several different HGM classes. For example, seeps at the base of a
0.	slope may grade into a riverine floodplain, or a small stream within	
		SIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		wetland. NOTE: Use this table only if the class that is recommended in
		vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that repres	ents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of freehwater watland	Treat as ESTUARINE under wetlands with special
If.	freshwater wetland	characteristics apply to your wetland, or you have more than 2 HGM classes
	hin a wetland boundary, classify the wetland as <b>Depression</b>	
vv 11	and a worland boundary, classify the worland as <b>Depression</b>	ar for the fatting.

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 sco
1	Does the wetland have the <u>potential</u> to improve water quality?	per box)
) 1	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.38
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1	1
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> )	0
	YESpoints = 4NOpoints = 0D 1.3Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	<ul> <li>D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):</li> <li>Wetland has persistent, ungrazed vegetation &gt;= 95% of area</li></ul>	Figure
	• Wetland has persistent, ungrazed vegetation $> = 1/2$ of area	0
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	<ul> <li>Area seasonally ponded is &gt; 1/2 total area of wetland points = 4</li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland points = 2</li> </ul>	
	• Area seasonally ponded is $< 1/4$ total area of wetland	0
	Map of Hydroperiods	
	Total for D 1Add the points in the boxes above	6
2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 4
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	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 <u>X</u> Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	1
	Other	X2
	YES multiplier is 2 NO multiplier is 1	
	<b>TOTAL</b> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	
		12
•	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	12
•	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	<u>e</u>
• 3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit	<u>e</u>
• 3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit <ul> <li>Unit is a depression with no surface water leaving it (no outlet)</li></ul>	<u>e</u>
• 3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40
3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet) points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet	<u>e</u>
3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet) points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	(see p.40
• 3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet) points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1         (If ditch is not permanently flowing treat unit as "intermittently flowing")       • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	(see p.40
3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet) points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")         • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0         D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	(see p.40
03	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet) points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")         • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0         D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).	(see p.40
3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit <ul> <li>Unit is a depression with no surface water leaving it (no outlet)</li></ul>	(see p.4)
3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40
) 3	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40
03	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit <ul> <li>Unit is a depression with no surface water leaving it (no outlet)</li></ul>	(see p.40
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the <u>potential</u> to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the <u>potential</u> to reduce flooding and erosion?         D 3.1 Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)	(see p.40

D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>	(see p. 49)
	<ul> <li>indicators of opportunity apply.</li> <li>Wetland is in a headwater of a river or stream that has flooding problems.</li> <li>Wetland drains to a river or stream that has flooding problems</li> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> <li>Other</li> </ul>	Multiplier X1
	YES multiplier is 2 NO multiplier is 1	
•	<b><u>TOTAL</u></b> – <b>Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	1

These questions apply to wetlands of all HGM classes.			
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)	
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each cla 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants	ass is <b>Figure</b>	
	X       Scrub'shrub (areas where shrubs have > 30% cover)         Forested (areas where trees have > 30% cover)         If the unit has a forested class check if:	s = 2	
	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 Figure	
	cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods)         Permanently flooded or inundated       4 or more types present points         Seasonally flooded or inundated       3 or more types presentpoints         X       Occasionally flooded or inundated       2 types presentpoints         X       Saturated only       1 type presentpoints         Permanently flowing stream or river in, or adjacent to, the wetland       Seasonally flowing stream in, or adjacent to, the wetland         Lake-fringe wetland	= 3 = 2 = 1 = 0 1	
	Freshwater tidal wetland = 2 points Map of hydroper	iods	
	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 s 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:       > 19 species	2	
	H 1.4 Interspersion of Habitats ( <i>see p. 76</i> ): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1 the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	), or	
	None = 0 points Low = 1 point Low = 1 point Moderate = 2 points Moderate = 2 points Note: If you have 4 or more chore of a vegetation classes and open water, the rating is always "high".		
	Use map of Cowardin cl High = 3 points	asses.	
	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 p you put into the next column.	least 0 ve	
	Invasive plants cover less than 25% of the wetland area in each stratum of plants         NOTE: The 20% stated in early printings of the manual on page 78 is an error.         H 1 TOTAL Score – potential for providing habitat       Add the points in the column a	bove 4	

Wetland name or number 29D

2 Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H 2.1	Buffers (see P. 80):         Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed"	5 4 3 3 1 2 2 1 2
H 2.2	<ul> <li><u>Corridors and Connections</u> (see p. 81)</li> <li>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).</li> <li>YES = 4 points (go to H 2.3)</li> <li>NO = go to H 2.2.2</li> <li>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above?</li> <li>YES = 2 points (go to H 2.3)</li> <li>NO = go to H 2.2.3</li> <li>H. 2.2.3 Is the wetland:         <ul> <li>Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>YES = 1 point</li> <li>Within 1 mile of a lake greater than 20 acres?</li> </ul> </li> </ul>	at 1 1 1 1

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm )	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
<i>NOTE: the connections do not have to be relatively undisturbed.</i> <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
<b>Biodiversity Areas and Corridors</b> : Areas of habitat that are relatively important to various species of native	
fish and wildlife ( <i>full descriptions in WDFW PHS report p. 152</i> ).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	)
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; cro	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important ( <i>full descriptions in WDFW PHS report p. 158</i> ).	;
<b>X</b> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic an	hd
terrestrial ecosystems which mutually influence each other.	u
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie	or
a wet prairie (full descriptions in WDFW PHS report p. 161).	3
<u>X</u> Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore	ore,
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
<b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soil	ls
rock, ice, or other geological formations and is large enough to contain a human.	15,
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
<b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basa	ılt,
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
<b>Snags and Logs:</b> Trees are considered snags if they are dead or dying and exhibit sufficient decay characterist	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of $> 51$ cm (20 in	
western Washington and are $> 2 \text{ m}$ (6.5 ft) in height. Priority logs are $> 30 \text{ cm}$ (12 in) in diameter at the larg end, and $> 6 \text{ m}$ (20 ft) long.	jest
If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
If we than has 2 priority habitats = 3 points	
If wetland has <b>1</b> priority habitat = <b>1</b> point No habitats = $0$ points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	e
addressed in question H 2.4)	
H 2.4 <u>Wetland Landscape</u> : Choose the one description of the landscape around the wetland that best fits (see p	o. 84)
• There are at least 3 other wetlands within $1/2$ mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints	- 5
<ul> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe</li> </ul>	= 5
• The wetland is Lake-iringe on a lake with fittle disturbance and there are 5 other lake-iringe wetlands within 1/2 milepoints	- 5
<ul> <li>There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are</li> </ul>	3
disturbed	= 3
• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints	= 3
• There is at least 1 wetland within 1/2 milepoints	
• There are no wetlands within 1/2 milepoints	
<b>H 2</b> TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H	
TOTAL for H 1 from pa	ge 8 4
• Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on</i>	<b>p. 1</b> 12

#### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With exclusive excepted there 0.5 and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	<b>YES</b> = Category I <b>NO</b> = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
	<ul> <li>determining the size threshold of 1 acre.</li> <li>At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water,</li> </ul>	Dual Rating I/II
	or contiguous freshwater wetlands.	
SC2	<u>Natural Heritage Wetlands</u> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? ( <i>This</i>	
	<i>question is used to screen out most sites before you need to contact WNHP/DNR.)</i> S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?         YES = Category 1       NO not a Heritage Wetland	Cat I
SC3	Bogs (see p. 87)	
505	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function.	
	<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2</li> </ol>	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	<ul> <li>YES = Is a bog for purpose of rating NO = go to question 4</li> <li>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.</li> <li>4 Is the unit forested (&gt; 30% cover) with sitka spruce subalpine fir western red cedar western</li> </ul>	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
	<b>YES</b> = Category I <b>NO</b> = Is not a bog for purpose of rating	21

SC4	<b>Forested Wetlands</b> (see p. 90)	
~	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	<b>Old-growth forests</b> : (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	<b>YES</b> = Category I <b>NO</b> = $X$ not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
~ ~ ~ ~	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	<b>YES</b> = Go to SC 5.1 <b>NO</b> $\underline{X}$ not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	YES = Category I     NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	<b>YES</b> = Go to SC 6.1 <b>NO</b> <u>X</u> not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	<ul> <li>Grayland-Westport lands west of SR 105</li> </ul>	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II    NO = go to SC 6.2	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	0
	<b>YES</b> = Category III	Cat. III
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
•	If you answered <b>NO</b> for all types enter "Not Applicable" on p. 1	

Wetland name or number 30B

state or federal database.

SP3.

SP4.

WETLAND RA Version 2 – Updated Ju Updated Oct. 200	uly 2006 to inc	rease accuracy		among users		
Name of wetland (if known): 30B				_ Date of si	te visit: <u>09-2</u>	7-13
Rated by: Colin Worsley / Matt Maynard Trai	ned by Ecol	ogy? Yes _	<u>X</u> No I	Date of traini	ing: <u>11-2005 / (</u>	04-2006
SEC: 29 TOWNSHIP: 25N	RANGE	: <u>06E</u>	Is S/T/R in Ap	pendix D?	Yes N	No <u>X</u>
Map of wetland unit: 1	Figure		Estimated size	0.03 acre		
	SUMMA	RY OF RA	ГING			
Category based on FUNCTIONS provided by				III	<u>x</u> IV_	
Category I = Score > 70		Score for V	Water Quality Fur	octions	22	
Category II = Score 51 - 69			or Hydrologic Fur		10	
Category III = Score $30 - 50$			re for Habitat Fur		14	
Category IV = Score < 30		тот	AL Score for Fur	octions	46	
					-	
Category based on SPECIAL CHARACTERIS Final Catego Summary of basic in	<b>ory</b> (choose	e the "highes	st" category from		III	
Wetland Unit has Special Characteristics		Wetla	nd HGM Class d for Rating			
Estuarine		Depressio		X		
Natural Heritage Wetland		Riverine	~ ^			
Bog Mature Forest		Lake-frin Slope		(x)		
Old Growth Forest		Flats		(A)		
Coastal Lagoon		Freshwat	er Tidal			
Interdunal						
None of the above	X		nit has multiple ses present	Х		
<b>Does the wetland being rated meet any of the</b> need to protect the wetland according to the reg						ou will
Check List for Wetlands (in addition to the protecti	that Need	Additional	Protection		YES	NO
SP1. Has the wetland unit been documented a Endangered <b>animal or plant</b> species (T/A	s a habitat f			ened or		Х

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

Х

Х

Х

For the purposes of this rating system, "documented" means the wetland is on the appropriate

*Endangered animal species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or

in a local management plan as having special significance.

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008 Page 1 of 9

#### **Classification of Vegetated Wetlands for Western Washington**

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by	
	NO – go to 2 YES – the wetland class is Tie If yes, is the salinity of the water during periods of an	
	YES – Freshwater Tidal Fringe	NO – Saltwater Tidal Fringe (Estuarine)
		e use the forms for <b>Riverine</b> wetlands. If it is a Saltwater Tidal Fringe it
		arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and
		istency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and	
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit. NO - go to 3 $YES - The v$	vetland class is <b>Flats</b>
	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	
	The vegetated part of the wetland is on the sh	ores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 a	
	At least 30% of the open water area is deeper NO – go to 4 YES – The v	than 6.6 (2 m)? vetland class is <b>Lake-fringe (Lacustrine Fringe)</b>
4.	Does the entire wetland meet all of the following criteria?	venand class is Lake-It hige (Lacustific I thige)
т.	The wetland is on a slope ( <i>slope can be very</i> )	gradual).
	The water flows through the wetland in one d	irection (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale w	
	The water leaves the wetland <b>without being</b> in these works and the set need in these set.	<b>mpounded</b> ? types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		vetland class is <b>Slope</b>
5.	Does the entire wetland meet all of the following criteria?	
		re it gets inundated by overbank flooding from that stream or
	river. The overbank flooding occurs at least once ev	very two years
		sions that are filled with water when the river is not flooding.
		vetland class is <b>Riverine</b>
6.		hich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the NO – go to 7 $YES$ – Th	
7		e wetland class is <b>Depressional</b>
7.	pond surface water more than a few inches. The unit seem	ious depression and no overbank flooding. The unit does not s to be maintained by high groundwater in the area. The
	wetland may be ditched, but has no obvious natural outlet.	
		e wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
	slope may grade into a riverine floodplain, or a small stream within	
		SIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the
		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 v	vetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represent	ents more than 90% of the total area.
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional Slope + Lake-fringe	Depressional Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
<b>T</b> C	freshwater wetland	characteristics
lf 🔹	you are unable still to determine which of the above criteria:	apply to your wetland, or you have more than 2 HGM classes

within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 sco per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38
	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet) points = 3	Figure
	<ul> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1</li> </ul>	2
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	2
	outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") <b>Provide photo or drawing</b> D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> )	
	$\frac{VES}{VES} = 4$ NO points = 0	4
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	<ul> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area</li></ul>	riguit
	• Wetland has persistent, ungrazed vegetation $> = 1/10$ of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes           D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	<ul> <li>ponded. Estimate area as the average condition 5 out of 10 years.</li> <li>Area seasonally ponded is &gt; 1/2 total area of wetland points = 4</li> </ul>	
	• Area seasonally ponded is $> 1/2$ total area of wetland	0
	• Area seasonally ponded is $< 1/4$ total area of wetland points = 0	0
	Map of Hydroperiods           Total for D 1         Add the points in the boxes above	<b>1</b> 1
D 2	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 4-
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplie
	$\underline{X}$ Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	X2
	Wetland is fed by groundwater high in phosphorus or nitrogen	X2
•	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL – Water Quality Functions         Multiply the score from D1 by D2; then add score to table on p. 1	
•	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1	22
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions         Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?	22
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions         Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit	22
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions         Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet) points = 4	22 (see p.40
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions         Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet	22 (see p.40
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions         Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	22 (see p.46
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other	22 (see p.40 2
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions         Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet) points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	22 (see p.40 2
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions       Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)points = 4         • Unit has an intermittently flowing, OR highly constricted permanently flowing outletpoints = 2         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	22 (see p.40 2
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1    TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	22 (see p.40 2
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1    TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	22 (see p.40 2
• D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1 <b>TOTAL - Water Quality Functions</b> Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. <b>Does the wetland have the potential to reduce flooding and erosion?</b> D 3.1 Characteristics of surface water flows out of the wetland unit <ul> <li>Unit is a depression with no surface water leaving it (no outlet)</li></ul>	22 (see p.46 2
• D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1 <b>TOTAL - Water Quality Functions</b> Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. <b>Does the wetland have the potential to reduce flooding and erosion?</b> D 3.1 Characteristics of surface water flows out of the wetland unit <ul> <li>Unit is a depression with no surface water leaving it (no outlet)</li> <li>points = 4</li> <li>Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 <ul> <li>(If ditch is not permanently flowing treat unit as "intermittently flowing")</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0</li> <li>D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For</li> <li>units with no outlet measure from the surface of permanent water or deepest part (if dry).</li> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7</li> <li>The wetland is a "headwater" wetland</li></ul></li></ul>	22 (see p.46 2
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other       YES multiplier is 2       NO multiplier is 1         TOTAL - Water Quality Functions       Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         •       Unit is a depression with no surface water leaving it (no outlet)	22 (see p.46 2
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         VES multiplier is 2       NO multiplier is 1         TOTAL - Water Quality Functions       Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         • Unit is a depression with no surface water leaving it (no outlet)       points = 4         • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	22 (see p.46 2
◆ D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions       Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         •       Unit is a depression with no surface water leaving it (no outlet) points = 4         •       Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	22 (see p.40 2 0
• D 3	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         WES multiplier is 2         NO multiplier is 1         TOTAL – Water Quality Functions       Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         •       Unit is a depression with no surface water leaving it (no outlet)	22 (see p.40 2 0
◆ → → → → → → → → → → → → → → → → → → →	Wetland is fed by groundwater high in phosphorus or nitrogen         Other         YES multiplier is 2         NO multiplier is 1         TOTAL - Water Quality Functions       Multiply the score from D1 by D2; then add score to table on p. 1         HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation.         Does the wetland have the potential to reduce flooding and erosion?         D 3.1       Characteristics of surface water flows out of the wetland unit         •       Unit is a depression with no surface water leaving it (no outlet) points = 4         •       Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	22 (see p.46 2 0

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

The	ese questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for ea 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover)	ach class is <b>Figure</b>
	$\overline{X}$ Forested (areas where trees have > 30% cover)If the unit has a forested class check if: $\underline{X}$ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/g cover) that each cover 20% within the forested polygon.Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4Map of Cowardin vegetation 3 structures2 structures1 structure	on classes points = 2
	H 1.2 <u>Hydroperiods</u> (see p.73):	Figure
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroper Permanently flooded or inundated 4 or more types present permanently flooded or inundated 2 types present permanently flooded or inundated 1 type present permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	$\begin{array}{c} \text{in the radius fo} \\ \text{riods}), \\ \text{oints} = 3 \\ \text{oints} = 2 \\ \text{oints} = 1 \\ \text{oints} = 0 \end{array}$
	Freshwater tidal wetland = 2 points Map of hydrogenetic statements and the second statement of	roperiods
	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 species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purploosestrife, Canadian Thistle.         If you counted:       > 19 species	ple $ts = 2$ $ts = 1$ $1$
	H 1.4       Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or non the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or non or 3 vegetation classon open water, the ratio always "high".         None = 0 points       Low = 1 point	nore classes <b>Figure</b> sses and
	Use map of Coward High = 3 points	<b>din classes.</b> 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 you put into the next column.         X       Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long)         Standing snags (diameter at the bottom > 4 inches) in the wetland         Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extend         3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10)         Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees th not yet turned grey/brown)         At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in are permanently or seasonally inundated (structures for egg-laying by amphibians)         Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	ds at least )m) 1 hat have
	<b>H 1 TOTAL Score</b> – potential for providing habitat Add the points in the colu	ımn above 5

Wetland name or number 30B

H 2 Do	es the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 sco per box)
H	Buffers (see P. 80):         Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	1
H		t D 1

diameter at the largest end, and > 6 m (20 ft) long.       If wetland has 3 or more priority habitats = 4 points         If wetland has 2 priority habitats = 3 points       If wetland has 1 priority habitat = 1 point       No habitats = 0 points         Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)       H 2.4       Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)       • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5       • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	<ul> <li>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</li> <li>Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</li> <li>Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).</li> <li>Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</li> <li>Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</li> <li>Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 152).</li> <li>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.</li> <li>Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).</li> <li>X Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history</li></ul>	4
H 2.4       Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)         • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5         • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5         • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3         • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3         • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3         • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3         • There is at least 1 wetland within 1/2 milepoints = 0         H 2 TOTAL Score – opportunity for providing habitat       Add the scores from H2.1, H2.2, H2.3, H2.4       9         TOTAL for H 1 from page 8       5	If wetland has 2 priority habitats = 3 pointsIf wetland has 1 priority habitat = 1 pointNo habitats = 0 pointsNote: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
within 1/2 mile       points = 3         • There is at least 1 wetland within 1/2 mile       points = 2         • There are no wetlands within 1/2 mile       points = 0         H 2 TOTAL Score – opportunity for providing habitat       Add the scores from H2.1, H2.2, H2.3, H2.4       9         TOTAL for H 1 from page 8       5	<ul> <li>H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)</li> <li>There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5</li> <li>There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are</li> </ul>	3
TOTAL for H 1 from page 85	<ul> <li>The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3</li> <li>There is at least 1 wetland within 1/2 milepoints = 2</li> </ul>	
	<b>H 2</b> TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	9
	TOTAL for H 1 from page 8	5
	◆ <b>Total Score for Habitat Functions</b> Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	14

#### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	<b>Wetland Type</b> – <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate</i>	
	<i>criteria are met.</i> Estuarine wetlands? (see p.86)	
SC1	Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and	
	SC 1.1Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?YES = Category INO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <b>YES</b> = Category I <b>NO</b> = Category II	Cat. I
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
	<ul> <li>with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.</li> <li>At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	Dual Rating I/II
SC2	Natural Heritage Wetlands (see p. 87)           Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.)       (This question is used to screen out most sites before you need to contact WNHP/DNR.)         S/T/R information from Appendix D or accessed from WNHP/DNR web site          YES Contact WNHP/DNR (see p. 79) and go to SC 2.2       NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?           YES = Category 1         NO not a Heritage Wetland	Cat I
SC3	<ul> <li>Bogs (see p. 87)</li> <li>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i></li> <li>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2</li> <li>2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating</li> <li>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4</li> <li>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is</li> </ul>	
	<ul> <li>less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.</li> <li>4. Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> <li>YES = Category I</li> <li>NO = Is not a bog for purpose of rating</li> </ul>	Cat. I

SC4	Forested Wetlands (see p. 90)							
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish							
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland							
	based on its function.							
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a							
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)							
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or							
	more).							
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees							
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW							
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.							
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old							
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than							
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally							
	less than that found in old-growth.	Cat. I						
	<b>YES</b> = Category I <b>NO</b> = $\underline{X}$ not a forested wetland with special characteristics							
SC5	Wetlands in Coastal Lagoons (see p. 91)							
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?							
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated							
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.							
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> $0.5$							
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the							
	bottom.)							
	<b>YES</b> = Go to SC 5.1 <b>NO</b> $\underline{X}$ not a wetland in a coastal lagoon							
	SC 5.1 Does the wetland meet all of the following three conditions?							
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has							
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).							
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed							
	or un-mowed grassland.	Cat. I						
	The wetland is larger than 1/10 acre (4350 square ft.)							
	YES = Category I     NO     = Category II	Cat. II						
SC6	Interdunal Wetlands (see p. 93)							
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or							
	WBUO)?							
	<b>YES</b> = Go to SC 6.1 <b>NO</b> $\underline{X}$ not an interdunal wetland for rating							
	If you answer yes you will still need to rate the wetland based on its functions.							
	In practical terms that means the following geographic areas:							
	<ul> <li>Long Beach Peninsula lands west of SR 103</li> <li>Grayland-Westport lands west of SR 105</li> </ul>							
	<ul> <li>Orayland-westport rands west of SR 105</li> <li>Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul>							
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?							
	$\mathbf{YES} = \text{Category II} \qquad \mathbf{NO} = \text{go to SC 6.2}$	Cat. II						
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?							
	<b>YES</b> = Category III	Cat. III						
	Category of wetland based on Special Characteristics	<b>Cat</b> , 111						
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.							
	If you answered <b>NO</b> for all types enter "Not Applicable" on p. 1	NA						
	a you answered the for an epper enter interreprised to on p. 1	ITA						

# APPENDIX C

Wetland Functions and Values Forms

 Wetland I.D. <u>15A</u>
 Project: <u>ELST South Sammamish Segment B</u>

Assessed by: <u>Matt Maynard</u>

Cowardin Class: <u>PFO/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>~0.50 acre</u> Date: <u>10/30/07 (rev: 03/11/14)</u>

	Occu			Principal	
Function/Value	Y	Ν		Function(s	
Flood Flow Alteration	X		Wetland likely provides minimal support for th function since it is primarily lake-fringe and slo HGM classes and is unable to retain water.	ope	Rating=Low
Sediment Removal	X		Wetland likely provides minimal support for th function since it is primarily lake-fringe and slo HGM classes.		Rating=Low Qualifiers: (1)
Nutrient & Toxicant Removal	X		Wetland likely provides minimal support for th function since it is primarily a slope HGM class		Rating=Low Qualifiers: (1)
Erosion Control & Shoreline Stabilization	X		Wetland is associated with one unnamed stream (#5) and the shoreline of Lake Sammamish. However, vegetation composition and condition limits this function.		Rating=Low
Production of Organic Matter and its Export	X		The wetland has at least 30% cover of herbaced vegetation, but is lake-fringe and slope HGM classes. Some organic matter may be exported via the associated unnamed stream (#5) and the shoreline of Lake Sammamish.		Rating=Low Qualifiers: (1, 6)
General Habitat Suitability	X		PFO and PEM Cowardin classes are present. However, the PEM class is maintained lawn. Wetland is surrounded by residential developm	ent.	Rating=Low Qualifiers: (3, 5)
Habitat for Aquatic Invertebrates	X		Wetland is lake-fringe and has a perennial strea flowing through it.	ım	Rating=Low
Habitat for Amphibians	X		Wetland has lake-fringe HGM class and a perennial stream flowing through it.		Rating=Low
Habitat for Wetland-Associated Mammals	X		Wetland has lake-fringe HGM class and a perennial stream flowing through it.		Rating=Low
Habitat for Wetland-Associated Birds	X		Wetland has lake-fringe HGM class (Lake Sammamish).		Rating=Low
General Fish Habitat	X		Wetland has lake-fringe HGM class and a perennial stream flowing through it.		Rating=Low
Native Plant Richness		X	Multiple Cowardin classes are present. Howev co-dominant plants are non-native ( <i>Phalaris</i> <i>arundinacea</i> ). Large trees are present on the sit		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; no determined significant by local jurisdiction.	ot	

 Wetland I.D.
 15BC
 Project: _ELST South Sammamish Segment B

Assessed by: <u>Erik Christensen</u>

Cowardin Class: <u>PFO/PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.15 acre</u> Date: <u>10/31/07 (rev: 03/11/14)</u>

	Occurr			Principal	
Function/Value	Y	N	Rationale	Function(s)	
Flood Flow Alteration	X		and contains 2 unnamed streams (#4 nas a restricted outlet through a culv		Rating=Low Qualifiers: (4)
Sediment Removal	X		and has slow moving water (in strea e herbaceous vegetation.	ums) and	Rating=Low Qualifiers: (1, 2, 3)
Nutrient & Toxicant Removal	X		and has slow moving water (in strea tated with dense herbaceous vegetat		Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization	X	(#4 a	and is associated with 2 unnamed st and #5) and is vegetated with woody aceous species.		Rating=Low Qualifiers: (1, 2, 3)
Production of Organic Matter and its Export	X	wood Unna	and contains herbaceous and decidu dy vegetation and export occurs thro amed Streams 4 and 5.	ough	Rating=Low Qualifiers: (1, 5, 6)
General Habitat Suitability	X	How Wetl Wetl	and PEM Cowardin classes are press ever, the PEM class is maintained la and is surrounded by residential dev and is as swale with 2 unnamed stre (5) in a maintained yard.	iwn. relopment.	Rating=Low Qualifiers: (3, 5)
Habitat for Aquatic Invertebrates	X	(#4 a	and is associated with 2 unnamed st and #5), is densely vegetated with er tation, and has woody debris.		Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X	and #	and is associated with 2 unnamed st (5), is densely vegetated with emerg tation, and has woody debris.	<b>`</b>	Rating=Low Qualifiers: (1, 2, 6)
Habitat for Wetland-Associated Mammals		X Wetl	and is sloped with 2 unnamed strear t the toe of slope. No open water pro-		
Habitat for Wetland-Associated Birds			and is sloped with 2 unnamed stream t the toe of slope. No open water pro-		
General Fish Habitat	X	Asso	ciated with a potential fish-bearing	water.	Rating=Low
Native Plant Richness		vege	and is in a maintained yard and dom tation is <i>Phalaris arundinacea</i> .		
Educational or Scientific Value		docu	e is no nearby parking & the site has mented scientific or educational use		
Uniqueness and Heritage			ocumented protected species or hab mined significant by local jurisdiction		

 Wetland I.D. <u>15D</u>
 Project: <u>ELST South Sammamish Segment B</u>
 Assessed by: <u>Colin Worsley</u>

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.05 acre</u> Date: <u>05/05/09 (rev: 09/12/13)</u>

	Occur	rrence		Principal	
Function/Value	Y	Ν	Rationale	Function(s	) Comments
Flood Flow Alteration	X		Wetland is in a maintained ditch, has outlets at north and south ends, and is able to retain minin volumes of water above normal conditions duri storm events.	nal	Rating=Low Qualifiers: (2)
Sediment Removal	X		Wetland is permanently inundated with seasona fluctuations, and has herbaceous vegetation.	1	Rating=Moderate Qualifiers: (1, 2, 3, 4, 5) Vegetation is maintained.
Nutrient & Toxicant Removal	X		Wetland is permanently inundated with seasona fluctuations, and has herbaceous vegetation.	1	Rating=Moderate Qualifiers: (1, 2, 4) Vegetation is maintained.
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a watercourse or shoreline.		
Production of Organic Matter and its Export	X		Wetland has herbaceous vegetation, is permanently inundated, and has outlets from which organic matter is flushed.		Rating=Low Qualifiers: (1, 4, 5, 6) Vegetation is maintained.
General Habitat Suitability		X	Wetland is a maintained vegetated ditch along t trail surrounded by development.	ne	
Habitat for Aquatic Invertebrates	X		Wetland is vegetated with herbaceous vegetatio and is permanently inundated.	n	Rating=Moderate Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Wetland is vegetated with herbaceous vegetatio and is permanently inundated.	n	Rating=Low Qualifiers: (1, 2, 6) Vegetation is maintained.
Habitat for Wetland-Associated Mammals		X	Wetland is a maintained vegetated ditch along t trail surrounded by development.	ne	
Habitat for Wetland-Associated Birds		X	No open water component in the wetland.		
General Fish Habitat		X	Wetland is not associated with a fish bearing wa	iter.	
Native Plant Richness	X				Rating=Low
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; no determined significant by local jurisdiction.	t	

 Wetland I.D. <u>15E</u>
 Project: <u>ELST South Sammamish Segment B</u>
 Assessed by: <u>Colin Worsley</u>

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.05 acre</u> Date: <u>05/05/09 (rev: 09/12/13)</u>

	Occur	rrence		Principal	
Function/Value	Y	Ν		Function(s	) Comments
Flood Flow Alteration	X		Wetland is in a maintained ditch, has outlets at t north and south ends, and is able to retain minin volumes of water above normal conditions durin storm events.	nal	Rating=Low Qualifiers: (2)
Sediment Removal	X		Wetland is permanently inundated with seasona fluctuations, and has herbaceous vegetation.	1	Rating=Moderate Qualifiers: (1, 2, 3, 4, 5) Vegetation is maintained.
Nutrient & Toxicant Removal	X		Wetland is permanently inundated with seasonal fluctuations, and has herbaceous vegetation.		Rating=Moderate Qualifiers: (1, 2, 4) Vegetation is maintained.
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a watercourse or shoreline.		
Production of Organic Matter and its Export	X		Wetland has herbaceous vegetation, is permanently inundated, and has outlets from which organic matter is flushed.		Rating=Low Qualifiers: (1, 4, 5, 6) Vegetation is maintained.
General Habitat Suitability		Х	Wetland is a maintained vegetated ditch along th trail surrounded by development.	ie	
Habitat for Aquatic Invertebrates	X		Wetland is vegetated with herbaceous vegetation and is permanently inundated.	n	Rating=Moderate Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Wetland is vegetated with herbaceous vegetation and is permanently inundated.	1	Rating=Low Qualifiers: (1, 2, 6) Vegetation is maintained.
Habitat for Wetland-Associated Mammals		X	Wetland is a maintained vegetated ditch along th trail surrounded by development.	ie	
Habitat for Wetland-Associated Birds		X	No open water component in the wetland.		
General Fish Habitat		X	Wetland is not associated with a fish bearing wa	ter.	
Native Plant Richness	X				Rating=Low
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

Project: ELST South Sammamish Segment B Wetland I.D. 18C Assessed by: Matt Maynard Ecology Category: III Local Rating: III Wetland size: 0.02 acre Date: 10/31/07 (rev: 03/11/14) Cowardin Class: PSS Principal Occurrence Function/Value Y Rationale Function(s) Ν Comments Wetland is a small, closed depressional system and Rating=Low Flood Flow Alteration Χ has capacity for some water detention. Woody Oualifiers: (3, 5) vegetation is present. Wetland is not associated with a watercourse. Sediment Removal Wetland may receive some sediment from trail. Rating=Low Χ Seasonal ponding occurs. Oualifiers: (1, 5) Х This wetland may receive nutrients/ toxicants from Rating=Low Nutrient & Toxicant Removal roadway stormwater runoff and adjacent residential Qualifiers: (1, 2, 4)vards. The wetland is a closed depressional system with seasonal inundation. Wetland is not associated with a water course or **Erosion Control & Shoreline** X shoreline. Stabilization Dense vegetation is present in wetland, but the Production of Organic Matter X wetland is a closed depressional system with no and its Export outlet. Surrounding area is fragmented by residential General Habitat Suitability Х Rating=Low development, East Lake Sammamish Parkway, and Qualifiers: (2) driveways. However, the wetland buffer is forested. Seasonal inundation occurs. Woody debris is Rating=Low Habitat for Aquatic X present. Oualifiers: (1, 5) Invertebrates Seasonal inundation occurs. Wetland may provide Habitat for Amphibians Х Rating=Low refuge habitat for amphibians. Oualifiers: (1, 3, 4) Wetland does not have permanent ponding. Habitat for Wetland-Associated X Mammals Wetland does not have permanent ponding Habitat for Wetland-Associated Χ

Wetland is not associated with a fish bearing water.

There is no nearby parking & the site has no

No documented protected species or habitat; not

documented scientific or educational use.

determined significant by local jurisdiction.

Rating=Low

X

Χ

X

Х

Birds

General Fish Habitat

Native Plant Richness

Uniqueness and Heritage

Educational or Scientific Value

 Wetland I.D. <u>19A</u>
 Project: <u>ELST South Sammamish Segment B</u>
 Assessed by: <u>Matt Maynard</u>

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.02 acre</u> Date: <u>11/01/07 (rev: 09/12/13)</u>

	Occur	rence	2	Principal	
Function/Value	Y	Ν	Rationale	Function(s	) Comments
Flood Flow Alteration		X	This wetland is a ditch with herbaceous veg and does not provide this function.	etation	
Sediment Removal	X		Wetland may receive some sediment from the Seasonal ponding occurs.	rail.	Rating=Low Qualifiers: (1, 2, 3, 5)
Nutrient & Toxicant Removal	X		This wetland is a ditch with herbaceous veg Seasonal ponding occurs in the ditch. May excess nutrients from surrounding residentia development.	receive	Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization		X	Not associated with a water course.		
Production of Organic Matter and its Export	X		Dense vegetation is present in wetland and a culvert is present.		Rating=Low Qualifiers: (1, 5, 6)
General Habitat Suitability		X	Surrounding area is fragmented by residentidevelopment, East Lake Sammamish Parkwand driveways.		
Habitat for Aquatic Invertebrates	X		Herbaceous vegetation occurs in areas of se inundation.	asonal	Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Wetland may provide refuge habitat for amphibians. Wetland likely is not used for amphibian breeding.		Rating=Low Qualifiers: (1, 2, 6)
Habitat for Wetland-Associated Mammals		X	Wetland does not have permanent ponding.		
Habitat for Wetland-Associated Birds		X	Wetland does not have permanent ponding		
General Fish Habitat		X	Wetland is not associated with a fish bearing	g water.	
Native Plant Richness		X	Wetland is dominated by invasive species ( <i>Phalaris arundinacea</i> ).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat determined significant by local jurisdiction.	; not	

 Wetland I.D. <u>19B</u>
 Project: <u>ELST South Sammamish Segment B</u>
 Assessed by: <u>Matt Maynard</u>

Cowardin Class: <u>PSS/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.36 acre</u> Date: <u>10/31/07 (rev: 03/11/14)</u>

	Occu	rrence	e	Principal	
Function/Value	Y	Ν	Rationale	Function(s	
Flood Flow Alteration	X		Wetland likely provides minimal support for function since it has lake-fringe and slope HC classes.	δM	Rating=Low
Sediment Removal		X	Wetland does not provide this function due to wetland's landscape position (lake-fringe and slope), lack of surface water, mowed vegetati and lack of sediment sources.		
Nutrient & Toxicant Removal	X		Wetland likely provides minimal support for t function since it is has lake-fringe and slope H classes.		Rating=Low Qualifiers: (1)
Erosion Control & Shoreline Stabilization	X		Wetland is associated with the shoreline of La Sammamish. However, vegetation composition and condition limits this function.		Rating=Low
Production of Organic Matter and its Export	X		The wetland has at least 30% cover of herbac vegetation, but it is mowed and the wetland h lake-fringe and slope HGM classes. Some organic matter may be exported via the shore of Lake Sammamish.	as	Rating=Low Qualifiers: (1, 6)
General Habitat Suitability	X		Wetland is primarily maintained lawn. Howev western boundary of the wetland is lake edge.		Rating=Low Qualifiers: (3, 5)
Habitat for Aquatic Invertebrates	X		Wetland is lake-fringe but is covered primaril with maintained lawn.	y	Rating=Low
Habitat for Amphibians	X		Wetland is lake-fringe but is covered primaril with maintained lawn.	ly 🛛	Rating=Low
Habitat for Wetland-Associated Mammals	X		Wetland is lake-fringe but is covered primaril with maintained lawn.	-	Rating=Low
Habitat for Wetland-Associated Birds	X		Wetland is lake-fringe but is covered primaril with maintained lawn.	y	Rating=Low
General Fish Habitat	X		Wetland is lake-fringe but is covered primaril with maintained lawn.	у	Rating=Low
Native Plant Richness		Χ	Wetland is primarily maintained lawn.		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; i determined significant by local jurisdiction.	not	

Wetland I.D. 20A	Project: _	ELST South Sammamish Segment B	Assessed by: Matt Maynard

Cowardin Class: <u>PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.05 acre</u> Date: <u>11/01/07 (rev: 09/12/13)</u>

	Occu			Principal	
Function/Value	Y	Ν	Rationale	Function(s	/ · · · · · · · · · · · · · · · · · · ·
Flood Flow Alteration	X		Wetland is able to retain small amounts of wa during storm events.	ter	Rating=Low
Sediment Removal	X		The wetland is a vegetated depressional ditch with residential development uphill.		Rating=Low Qualifiers: (1, 3, 5)
Nutrient & Toxicant Removal	X		The wetland is a seasonally inundated vegetat depressional ditch with residential developme uphill.		Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization		X	Wetland likely does not provide this function since it is not associated with a water course.		
Production of Organic Matter and its Export	X		The wetland has at least 30% cover of herbace vegetation and has an outlet for export.	eous	Rating=Low Qualifiers: (1, 6)
General Habitat Suitability		X	Wetland is a vegetated ditch and is fragmented from other habitat from residential developme		
Habitat for Aquatic Invertebrates	X		Wetland has emergent vegetation and seasona ponded water in the ditch.	llly	Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Wetland has emergent vegetation and seasona ponded water in the ditch.	lly	Rating=Low Qualifiers: (1, 2, 6)
Habitat for Wetland-Associated Mammals		X	Permanent water occurs in this wetland, but n- sufficient for wetland-associated mammals.	ot	
Habitat for Wetland-Associated Birds		X	Permanent water occurs in this wetland, but ne sufficient for wetland-associated birds (not op water).	en	
General Fish Habitat		X	Wetland is not associated with a fish bearing	water.	
Native Plant Richness		X	Wetland is dominated by <i>Phalaris arundinace</i>	ea.	
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; r determined significant by local jurisdiction.	not	

Wetland I.D. <u>21AC</u>	Project:ELST South Sammamish Segment B	Assessed by: <u>Matt Maynard</u>
Cowardin Class: PEM	Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.40 acre</u>	Date: 10/31/07 (rev: 03/19/14)

	Occur	rence	2	Principal	
Function/Value	Y	Ν	Rationale	Function(s	) Comments
Flood Flow Alteration	X		Wetland provides minimal support for this fund since it is has lake-fringe and slope HGM class		Rating=Low
Sediment Removal		X	Wetland does not provide this function due to t wetland's landscape position (lake-fringe and slope), lack of surface water, mowed vegetation and lack of sediment sources.		
Nutrient & Toxicant Removal	X		Wetland likely provides minimal support for th function since it is has lake-fringe and slope HG classes.	GM	Rating=Low Qualifiers: (1)
Erosion Control & Shoreline Stabilization	X		This wetland is associated with the shoreline of Lake Sammamish. However, it is a maintained lawn.		Rating=Low
Production of Organic Matter and its Export	X		The wetland has at least 30% cover of herbaced vegetation and slopes toward Lake Sammamish		Rating=Low Qualifiers: (1)
General Habitat Suitability	X		Western boundary of the wetland is lake edge. vegetation is maintained lawn. Wetland is surrounded by residential development	The	Rating=Low Qualifiers: (3)
Habitat for Aquatic Invertebrates	X		Wetland is lake-fringe and has a stream flowing through it. Dominated by maintained lawn.	an	Rating=Low
Habitat for Amphibians	X		Wetland is lake-fringe and has a stream flowing through it. Dominated by maintained lawn.	5	Rating=Low
Habitat for Wetland-Associated Mammals	X		Wetland is lake-fringe. Dominated by maintain lawn.	ed	Rating=Low
Habitat for Wetland-Associated Birds	X		Wetland is lake-fringe. Dominated by maintain lawn.	ed	Rating=Low
General Fish Habitat	X		Wetland is lake-fringe. Dominated by maintain lawn.	ed	Rating=Low
Native Plant Richness		X	Wetland is dominated by maintained lawn.		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; no determined significant by local jurisdiction.	ot	

Wetland I.D. 21B	Project: _	ELST South Sammamish Segment B	Assessed by: Matt Maynard

Cowardin Class: <u>PFO/PSS</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.08 acre</u> Date: <u>11/01/07 (rev: 09/12/13)</u>

	Occu	rrence	e P	rincipal			
Function/Value	Y	Ν		nction(s)			
Flood Flow Alteration	X		Wetland is vegetated with woody vegetation and the outlet is constricted by a culvert to the north.		Rating=Low Qualifiers: (4, 5)		
Sediment Removal	X		Slow moving water and fine sediment were observed in the ditch.		Rating=Moderate Qualifiers: (1, 2, 6)		
Nutrient & Toxicant Removal	X		Permanent inundation occurs in the ditch.		Rating=Low Qualifiers: (1, 2)		
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course or shoreline.				
Production of Organic Matter and its Export	X		Woody plants in the wetland are deciduous and outlet is present, allowing export.		Rating=Low Qualifiers: (2)		
General Habitat Suitability	X		PFO and PSS Cowardin classes are found in the wetland.		Rating=Low Qualifiers: (5)		
Habitat for Aquatic Invertebrates	X		Permanent inundation occurs in the ditch.		Rating=Low Qualifiers: (1, 6)		
Habitat for Amphibians	X		Permanent inundation occurs in the ditch.		Rating=Low Qualifiers: (1, 6)		
Habitat for Wetland-Associated Mammals		X	Permanent ponding insufficient for wetland- associated mammals.				
Habitat for Wetland-Associated Birds		X	No open water component in the wetland.				
General Fish Habitat		X	Wetland is not associated with a fish bearing water	r.			
Native Plant Richness	X		Wetland is dominated by native species and has wo Cowardin classes (PFO and PSS).		Rating=Low Qualifier: (1, 2, 3)		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.				
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.				

Wetland I.D. 21D	Project:ELST South Sammamish Segment B	Assessed by: Matt Maynard
Cowardin Class: PEM	Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.15 acre</u> _	Date: <u>11/01/07 (rev: 09/20/13)</u>

	Occur	rence		Principal	
Function/Value	Y	Ν		Function(s	) Comments
Flood Flow Alteration		X	This wetland is a vegetated swale in a maintaine yard and not likely to provide this function.	d	
Sediment Removal	X		Slow moving water and dense herbaceous vegetation is present in the swale.		Rating=Low Qualifiers: (1, 3, 5)
Nutrient & Toxicant Removal	X		Wetland has at least 30% cover of live dense herbaceous vegetation.		Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course or shoreline.		
Production of Organic Matter and its Export	X		Wetland has at least 30% cover of live dense herbaceous vegetation and drains to a culvert to the south (export).		Rating=Low Qualifiers: (1, 5, 6)
General Habitat Suitability	X		This wetland is a vegetated swale in a maintaine yard fragmented from other habitats.	d	Rating=Low
Habitat for Aquatic Invertebrates	X		Permanent inundation occurs and emergent vegetation is present in the swale.		Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Wetland may provide refuge and feeding areas f amphibians, however breeding is not likely to occur due to the lack of thin stemmed or floating vegetation and sufficient water depth.		Rating=Low Qualifiers: (1, 6)
Habitat for Wetland-Associated Mammals		X	Permanent ponding insufficient for wetland- associated mammals.		
Habitat for Wetland-Associated Birds		X	No open water component in the wetland.		
General Fish Habitat		X	Wetland is not associated with a fish bearing wa	ter.	
Native Plant Richness		X	Wetland is dominated by maintained lawn.		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

 Wetland I.D.
 22AB
 Project:
 ELST South Sammamish Segment B

Assessed by: Matt Maynard

Cowardin Class: <u>PFO/PSS/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.46 acre</u> Date: <u>04/04/08 (rev: 09/20/13)</u>

	Occu			Principal	
Function/Value	Y	Ν	Rationale	Function(s	/
Flood Flow Alteration	Χ		Wetland is densely vegetated with herbaceous		Rating=Moderate
			deciduous woody vegetation and is associated an unnamed tributary. Is able to retain greater		Qualifiers: (4, 5)
			amounts of water during storm events.		
Sediment Removal	X		Wetland is densely vegetated with herbaceous		Rating=Moderate
			and deciduous woody vegetation and is		Qualifiers: (1, 2, 3)
			associated with an unnamed tributary.		
Nutrient & Toxicant Removal	Χ		Wetland is densely vegetated with herbaceous		Rating=Moderate
			deciduous woody vegetation and is associated an unnamed tributary.	With	Qualifiers: (1, 2, 4, 5)
Erosion Control & Shoreline	X		Wetland is densely vegetated with herbaceous		Rating=Low
Stabilization			and deciduous woody vegetation and is		Qualifiers: (1, 2, 3)
			associated with an unnamed tributary. Portion	of	
Production of Organia Matter	X		wetland adjacent to stream is small. Wetland is densely vegetated with herbaceous	<i>Q</i> ₂	Rating=Moderate
Production of Organic Matter and its Export	Λ		deciduous woody vegetation. Unnamed tribut		Qualifiers: (1, 2, 5, 6)
and its Export			& other culverts/outlets provide export.	ur y	Qualifiers: (1, 2, 0, 0)
General Habitat Suitability	X		Wetland has more than one Cowardin class an	d is	Rating=Moderate
			associated with an unnamed tributary.		Qualifiers: (3, 5)
Habitat for Aquatic	Χ		Wetland is densely vegetated and has seasonal		Rating=Low
Invertebrates			inundation.		Qualifiers: (1, 4, 5, 6)
Habitat for Amphibians	Χ		Wetland is densely vegetated and has seasonal		Rating=Low
			inundation.		Qualifiers: (1, 2, 4, 6)
Habitat for Wetland-Associated Mammals		X	Permanent ponding does not occur.		
Habitat for Wetland-Associated Birds		X	Permanent ponding does not occur.		
General Fish Habitat		X	Wetland is not associated with a fish bearing v	/ater.	
Native Plant Richness		Χ	Although wetland has more that one Cowardin	1	
			class, codominant vegetation is non-native		
			(Phalaris arundinacea).		
Educational or Scientific Value		Χ	There is no nearby parking & the site has no documented scientific or educational use.		
		<b>T</b> 7		~4	
Uniqueness and Heritage		Χ	No documented protected species or habitat; n determined significant by local jurisdiction.	ot	
			determined significant by local jurisdiction.		

Wetland I.D. 22CD

Project: <u>ELST South Sammamish Segment B</u> Assessed by: <u>Erik Christensen</u>

Cowardin Class: <u>PSS/PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.16 acre</u> Date: <u>11/07/07 (rev: 10/25/13)</u>

	Occur			Principal		
Function/Value	Y	Ν		Function(s)	/	
Flood Flow Alteration	X		This wetland has depressional and slope HGM classes and has capacity for some water detention	n.	Rating=Low	
Sediment Removal	X		Wetland has at least 30% cover of live dense herbaceous vegetation, However, the vegetation is mowed, which may limit support for this function.		Rating=Low Qualifiers: (1, 3)	
Nutrient & Toxicant Removal	X		Wetland has at least 30% cover of live dense herbaceous vegetation. Garden and East Lake Sammamish Parkway are upslope. Vegetation is mowed, which may limit support for this function	n	Rating=Low Qualifiers: (1, 4)	
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course or shoreline.			
Production of Organic Matter and its Export	X		Wetland has at least 30% cover of live dense herbaceous vegetation. Culvert provides outlet for organic matter export.		Rating=Low Qualifiers: (1, 6)	
General Habitat Suitability	X		Wetland is primarily a vegetated swale in a maintained yard, likely to provide minimal habit	at.	Rating=Low	
Habitat for Aquatic Invertebrates	X		This wetland has depressional and slope HGM classes with only occasional inundation in a vegetated swale in a maintained yard.	h only occasional inundation in a		
Habitat for Amphibians	X		This wetland has depressional and slope HGM classes with only occasional inundation in a vegetated swale in a maintained yard.		Rating=Low	
Habitat for Wetland-Associated Mammals		X	Permanent ponding does not occur.			
Habitat for Wetland-Associated Birds		X	Permanent ponding does not occur.			
General Fish Habitat		X	Wetland is not associated with a fish bearing wa	ter.		
Native Plant Richness		X	Wetland is dominated by maintained lawn, <i>Phalaris arundinacea</i> , and <i>Rubus armeniacus</i> .			
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.			
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.			

Wetland I.D. <u>22E</u> P	roject:	EL	ST South Sammamish Segment B Asses	ssed by: Matt Maynard/Colin Worsley
Cowardin Class: <u>PEM</u> E	cology	Cate	gory: <u>IV</u> Local Rating: <u>IV</u> Wetland si	ize: <0.01 acre_ Date: 10/25/13
	Occu	rrence		cipal
Function/Value	Y	Ν	Rationale Functi	
Flood Flow Alteration	X		Wetland is a small, closed depressional system with no surface water, has capacity for very minimal water detention.	Rating=Low Qualifiers: (3)
Sediment Removal	X		Wetland may receive some sediment from trail. No ponding in wetland.	Rating=Low Qualifiers: (1, 3)
Nutrient & Toxicant Removal	X		This wetland may receive nutrients/ toxicants from adjacent roadways and residences. The wetland is a closed depressional system.	Rating=Low Qualifiers: (1, 4)
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course or shoreline.	
Production of Organic Matter and its Export		Χ	Dense vegetation is present in wetland, but the wetland is a closed depressional system with no outlet.	
General Habitat Suitability		X	Wetland is a small depression adjacent to trail and residences with one Cowardin class (PEM).	
Habitat for Aquatic Invertebrates		X	No inundation.	
Habitat for Amphibians		X	No inundation.	
Habitat for Wetland-Associated Mammals		X	No inundation.	
Habitat for Wetland-Associated Birds		X	No open water component in the wetland.	
General Fish Habitat		X	Wetland is not associated with a fish bearing water.	
Native Plant Richness		X	Wetland has one Cowardin class and vegetation is co-dominated by invasive species.	
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.	
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.	

 Wetland I.D. 23A
 Project: __ELST South Sammamish Segment B_____
 Assessed by: __Erik Christensen

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.03 acre</u> Date: <u>11/07/07 (rev: 1/25/13)</u>

	Occurre	ence	P P	rincipal	
Function/Value	Y	N		nction(s)	
Flood Flow Alteration	X		Wetland likely provides minimal support for this function since it is a slope/depressional wetland with a ditch located at the toe. The wetland is dominated by herbaceous vegetation.		Rating=Low
Sediment Removal	X		A vegetated ditch with slow moving, seasonal water is located in the wetland.		Rating=Low Qualifiers: (1, 2, 3)
Nutrient & Toxicant Removal	X		A vegetated ditch with seasonal inundation is located in the wetland. Wetland receives runoff from East Lake Sammamish Parkway.		Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a shoreline.		
Production of Organic Matter and its Export	X		The wetland has at least 30% cover of herbaceous vegetation and has outlets for exporting organic matter.		Rating=Low Qualifiers: (1, 6)
General Habitat Suitability	X		The wetland is fragmented by East Lake Sammamish Parkway, residential development, and the trail. Limited connectivity to upland and Wetland 23C to the north.		Rating=Low Qualifiers: (1, 3)
Habitat for Aquatic Invertebrates	X		Permanent inundation and emergent vegetation occur in the ditch.		Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Permanent inundation and emergent vegetation occur in the ditch.		Rating=Low Qualifiers: (1, 2, 6)
Habitat for Wetland-Associated Mammals		X	Permanent inundation is limited to ditch.		
Habitat for Wetland-Associated Birds		X	Permanent inundation is limited to ditch.		
General Fish Habitat		X	Wetland is not associated with a fish bearing water	·.	
Native Plant Richness		X	Codominant vegetation is non-native ( <i>Phalaris arundinacea</i> ).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction		

Wetland I.D. 23B	Project:	ELST South Sammamish Segment B	Assessed by:	M. Maynard

Cowardin Class: <u>PSS/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.05 acre</u> Date: <u>10/31/07 (rev: 9/20/13)</u>

	Occurrence Principal						
Function/Value	Y	N	Rationale	Function(s	/		
Flood Flow Alteration	X		Wetland likely provides minimal support for function since it has lake-fringe and slope HC classes.	n since it has lake-fringe and slope HGM			
Sediment Removal		X	Wetland does not provide this function due to wetland's landscape position (lake-fringe and slope), lack of surface water, and lack of sediment sources.				
Nutrient & Toxicant Removal	X		Wetland likely provides minimal support for function since it is has lake-fringe and slope l classes.		Rating=Low		
Erosion Control & Shoreline Stabilization	X		Wetland is associated with the shoreline of L Sammamish. However, vegetation compositi and condition limits this function.	on	Rating=Low		
Production of Organic Matter and its Export	X		The wetland has at least 30% cover of herbac vegetation and has lake-fringe and slope HGI classes. Some organic matter may be exporte via the shoreline of Lake Sammamish.	M	Rating=Low Qualifiers: (1, 6)		
General Habitat Suitability	X		Wetland is associated with Lake Sammamish	l.	Rating=Low Qualifiers: (3, 5)		
Habitat for Aquatic Invertebrates	X		Wetland is lake-fringe but is mostly sloped w no occurrences of inundation.	vith	Rating=Low		
Habitat for Amphibians	X		Wetland is lake-fringe but is mostly sloped w occurrences of inundation.	vith no	Rating=Low		
Habitat for Wetland-Associated Mammals	X		Wetland is lake-fringe but is mostly sloped w occurrences of inundation.	ith no	Rating=Low		
Habitat for Wetland-Associated Birds	X		Wetland is lake-fringe but is mostly sloped w occurrences of inundation.	ith no	Rating=Low		
General Fish Habitat	X		Wetland is lake-fringe but is mostly sloped w occurrences of inundation.	sloped with no Rating=Low			
Native Plant Richness		Χ	Wetland is co-dominated by invasive vegetat	ion.			
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.				
Uniqueness and Heritage		X	No documented protected species or habitat; determined significant by local jurisdiction.	not			

Wetla	and I.D. <u>2</u>	23C	Project:	ELST So	outh Samman	nish Segm	ent B	 	Assessed by: <u>Erik Chri</u>	istensen
C	1' 01						TTT 117.1	 0.00		0/00/10

Cowardin Class: <u>PSS/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.09 acre</u> Date: <u>11/07/07 (rev: 9/20/13)</u>

	Occu	rrence	2	Principal					
Function/Value	Y	Ν	Rationale	Function(s					
Flood Flow Alteration	X		it is a depression that has evidence of occasi and permanent inundation.	Wetland likely provides some water retention since t is a depression that has evidence of occasional and permanent inundation.       Rating=Low					
Sediment Removal	X		The wetland has a vegetated depressional di with residential development upslope and occasional and permanent inundation.	tch	Rating=Low Qualifiers: (1, 3, 5)				
Nutrient & Toxicant Removal	X		The wetland has a vegetated depressional dit with residential development upslope and occasional and permanent inundation.	ch	Rating=Low Qualifiers: (1, 2, 4)				
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water cours shoreline.	se or					
Production of Organic Matter and its Export		X							
General Habitat Suitability	X		Wetland has a vegetated depressional ditch. Surrounding areas is fragmented by resident development and roads.	ial	Rating=Low				
Habitat for Aquatic Invertebrates	X		Wetland has emergent vegetation and occasi and permanent ponded water in the ditch.	onal	Rating=Low Qualifiers: (1, 4, 6)				
Habitat for Amphibians	X		Wetland has emergent vegetation and occasi and permanent ponded water in the ditch.	onal	Rating=Low Qualifiers: (1, 2, 6)				
Habitat for Wetland-Associated Mammals		X	Permanent ponding is limited to ditch, insuff for wetland-associated mammals.	icient					
Habitat for Wetland-Associated Birds		X	No open water component present.						
General Fish Habitat		X	Wetland is not associated with a fish bearing stream.	5					
Native Plant Richness		X	Although wetland has two Cowardin classes dominant vegetation is non-native ( <i>Phalaris</i> <i>arundinacea</i> and <i>Rubus armeniacus</i> ).	,					
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.						
Uniqueness and Heritage		X	No documented protected species or habitat; determined significant by local jurisdiction	not					

 Wetland I.D. 24A
 Project: _____ELST South Sammamish Segment B
 Assessed by: _____Erik Christensen

 Cowardin Class: PFO/PSS/PEM
 Ecology Category: III
 Local Rating: III
 Wetland size: 0.60 acre_
 Date:11/07/07 (rev: 9/20/13)

	Occurre	Principal	•			
Function/Value	Y N		Rationale	Function(s)		
Flood Flow Alteration	X		nse woody vegetation and n adjacent water courses.	receives	Rating=Moderate Qualifiers: (5, 6)	
Sediment Removal	X	that is permane	ous vegetation occurs in a ntly inundated and wetlan streams that likely have e	d is	Rating=Low Qualifiers: (1, 3, 5)	
Nutrient & Toxicant Removal	X	is permanently	us vegetation occurs in a inundated. The wetland is ast Lake Sammamish Parl		Rating=Low Qualifiers: (1, 2, 4)	
Erosion Control & Shoreline Stabilization	X	The wetland ha	s PFO, PSS, and PEM Co o water courses flowing th	wardin	Rating=Moderate Qualifiers: (1, 2, 3)	
Production of Organic Matter and its Export	X	shrubs. Export running through		treams	Rating=High Qualifiers: (2, 3, 5, 6)	
General Habitat Suitability	X	PFO, PSS, and connected to tw present in wetla	nt species is high. Wetlan PEM Cowardin classes an o streams. Standing snags nd. However, wetland is esidential development.	d is	Rating=Moderate Qualifiers: (3, 4, 5)	
Habitat for Aquatic Invertebrates	X	inundated. Woo	in the wetland that is permody debris and litter presents run through wetland.		Rating=Moderate Qualifiers: (1, 5, 6)	
Habitat for Amphibians	X		ation occurs. Woody debri ams run through wetland.	is present	Rating=Low Qualifiers: (1, 4, 6)	
Habitat for Wetland-Associated Mammals	2		ling is limited to ditch, ins	sufficient		
Habitat for Wetland-Associated Birds	2		component present.			
General Fish Habitat	X	it is associated PFO, PSS, and	provides some fish habitat with Pine Lake Creek. We PEM Cowardin classes th ad detrital matter for the st	etland has at offer	Rating=Moderate Qualifiers: (1, 4)	
Native Plant Richness		non-native inva (Rubus armenia	ee Cowardin classes. How sive vegetation are co-dor acus and Phalaris arundin	ninant acea).		
Educational or Scientific Value		documented sci	rby parking & the site has entific or educational use.			
Uniqueness and Heritage	2		protected species or habi ificant by local jurisdiction			

Wetland I.D. <u>24B</u>	Project: _		ELST South Sammamish Segment B	Assessed by: <u>M. Maynard</u>
Cowardin Class: PFO/PSS	Ecology	Categ	ory: III Local Rating: III Wetland size:	<u>1.75 acres</u> Date: <u>11/02/07 (rev: 9/25/13)</u>
Occurrent Function/Value Y N				incipal Comments
•	1	IN	· · · · · · · · · · · · · · · · · · ·	ction(s) Comments
Flood Flow Alteration	X		Wetland likely provides this function since it has riverine and depressional HGM classes, has capacity for some water detention, and receives floodwater from adjacent water courses.	Rating=Moderate Qualifiers: (5, 6)
Sediment Removal	X		Wetland likely provides this function since it is associated with streams that likely have excess sediment input.	Rating=Moderate Qualifiers: (1, 5)
Nutrient & Toxicant Removal	X		Wetland likely provides this function since it is associated with streams that likely have excess nutrient and toxicant input.	Rating=Moderate Qualifiers: (1, 2)
Erosion Control & Shoreline Stabilization	X		The wetland has PFO and PSS Cowardin classes with two water courses flowing through it.	Rating=Moderate Qualifiers: (1, 2, 3)
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous trees and shrubs. Inundation occurs and export of nutrients occurs from stream running through the wetland.	Rating=High Qualifiers: (2, 3, 5, 6)
General Habitat Suitability	X		Diversity of plant species is high. Wetland has PFO and PSS Cowardin classes. However, wetland is surrounded by residential development.	Rating=Moderate Qualifiers: (2, 3, 5, 6)
Habitat for Aquatic Invertebrates	X		Permanent and occasional inundation occurs. Woody debris and litter present in wetland. Streams run through wetland.	Rating=Moderate Qualifiers: (1, 5, 6)
Habitat for Amphibians	X		Permanent and occasional inundation occurs. Woody debris present in wetland. Stream runs through wetland.	Rating=Moderate Qualifiers: (1, 4, 6)
Habitat for Wetland-Associated Mammals	X		Permanent ponding is limited.	Rating=Low Qualifiers: (1, 3)
Habitat for Wetland-Associated Birds		X	No open water component.	
General Fish Habitat	X		Wetland likely provides some fish habitat because it is associated with Pine Lake Creek. Wetland has PFO and PSS Cowardin classes that offer shade, cover, and detrital matter for the stream.	Rating=Moderate Qualifiers: (1, 4)
Native Plant Richness		X	Wetland has three strata of vegetation and large trees. However, non-native invasive vegetation is co-dominant ( <i>Rubus armeniacus</i> ).	
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.	
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.	

Wetland I.D. 24CProject: ELST South Sammamish Segment BAssessed by: Erik ChristensenCowardin Class: PFO/PEMEcology Category: IIILocal Rating: IIIWetland size: 0.16 acreDate:11/07/07 (rev: 9/25/13)

Occurrence Principal Function/Value Rationale Function(s) Comments Y Ν Wetland has dense woody vegetation and is Flood Flow Alteration X Rating=Low associated with a water course. Oualifiers: (5, 6) Χ Dense herbaceous vegetation occurs in a ditch Rating=Low Sediment Removal that is seasonally inundated. Oualifiers: (1, 3, 5)Nutrient & Toxicant Removal Х Dense herbaceous vegetation occurs in a ditch that Rating=Low is seasonally inundated. The wetland is downslope Oualifiers: (1, 2, 4) of East Lake Sammamish Parkway. The wetland has a PFO Cowardin class with a **Erosion Control & Shoreline** Х Rating=Low water course flowing through it. Oualifiers: (1, 2, 3) Stabilization Production of Organic Matter Χ Wetland is dominated by deciduous trees and Rating=Moderate shrubs. Export of nutrients occurs from stream Oualifiers: (2, 3, 5, 6) and its Export running through the wetland. Diversity of plant species is high. Wetland has PFO Rating=Moderate General Habitat Suitability Х and PEM Cowardin classes and is connected to a Oualifiers: (3, 4, 5)stream. However, wetland is surrounded by residential development. A ditch occurs in the wetland that is seasonally Habitat for Aquatic Х Rating=Moderate inundated. Woody debris and litter present in Qualifiers: (1, 5, 6)Invertebrates wetland. Stream runs through wetland. Habitat for Amphibians Х Seasonal inundation occurs. Woody debris present Rating=Moderate in wetland. Stream runs through wetland. Qualifiers: (1, 4, 6)Habitat for Wetland-Associated No permanent inundation occurs. X Mammals Habitat for Wetland-Associated No permanent inundation occurs. X Birds General Fish Habitat Χ Wetland is has a PFO Cowardin class that offers Rating=Low shade, cover, and detrital matter for the stream. Oualifiers: (1, 4) Wetland has two Cowardin classes. However, non-Native Plant Richness X native invasive vegetation is co-dominant (Rubus armeniacus). There is no nearby parking & the site has no Educational or Scientific Value Χ documented scientific or educational use. Uniqueness and Heritage No documented protected species or habitat; not Χ determined significant by local jurisdiction.

 Wetland I.D.
 25A
 Project:
 ELST South Sammamish Segment B
 Assessed by:
 Erik Christensen

 Cowardin Class: PFO
 Ecology Category: III
 Local Rating:
 III
 Wetland size: 0.25 acre
 Date:11/08/07 (rev: 9/25/13)

Occurrence Principal Function/Value Rationale Function(s) Comments Y Ν Wetland has dense woody vegetation and is Rating=Moderate Flood Flow Alteration X associated with a water course. Oualifiers: (5, 6) Χ Slow moving water, dense herbaceous vegetation, Rating=Moderate Sediment Removal Qualifiers: (1, 2, 3, 5) and ponding of water occur in the wetland. Nutrient & Toxicant Removal Х Dense herbaceous vegetation seasonal ponding Rating=Moderate occur. The wetland is downslope of East Lake Oualifiers: (1, 2, 4) Sammamish Parkway. Rating=Moderate The wetland has a PFO Cowardin class with a **Erosion Control & Shoreline** Х Oualifiers: (1, 2, 3) water course flowing through it. Stabilization Production of Organic Matter Χ Wetland is dominated by deciduous trees and Rating=Moderate shrubs. Export of nutrients occurs from stream Qualifiers: (2, 3, 5, 6) and its Export running through the wetland Diversity of plant species is moderate. Wetland has Rating=Moderate General Habitat Suitability Х a PFO Cowardin class and is connected to a Oualifiers: (3, 4, 5)stream. However, wetland is surrounded by residential development. Seasonal inundation occurs. Woody debris and Habitat for Aquatic Х Rating=Moderate litter present in wetland. Stream runs through Qualifiers: (1, 5, 6)Invertebrates wetland. Seasonal inundation occurs. Woody debris present Habitat for Amphibians Х Rating=Moderate in wetland. Stream runs through wetland. Qualifiers: (1, 4, 6)Habitat for Wetland-Associated Wetland has permanent and seasonal inundation. Rating=Low X Qualifier: (1, 3, 5) Mammals Habitat for Wetland-Associated No open water component. Χ Birds General Fish Habitat Χ Wetland has a PFO Cowardin class that offers Rating=Moderate shade, cover, and detrital matter for the stream. Oualifiers: (1, 4) Wetland has one Cowardin class. Non-native Native Plant Richness X invasive vegetation is co-dominant (Phalaris arundinacea). There is no nearby parking & the site has no Educational or Scientific Value Χ documented scientific or educational use. Uniqueness and Heritage No documented protected species or habitat; not X determined significant by local jurisdiction.

 Wetland I.D.
 25B
 Project:
 ELST South Sammamish Segment B
 Assessed by:
 Erik Christensen

Cowardin Class: <u>PFO/PSS/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.33 acre</u> Date: <u>11/08/07</u> (rev: <u>9/25/13</u>)

	Occu	rrence		Principal	
Function/Value	Y	Ν	Rationale	Function(s	/
Flood Flow Alteration	X		Wetland likely provides some water retention it is a depression that has evidence of season occasional inundation.		Rating=Low
Sediment Removal	X		Slow moving water, dense herbaceous veget and ponding of water occur in the wetland.	ation,	Rating=Moderate Qualifiers: (1, 2, 3, 5)
Nutrient & Toxicant Removal	X		Dense herbaceous vegetation is present and seasonal ponding occurs. Likely source is Ea Lake Sammamish Parkway.		Rating=Moderate Qualifiers: (1, 2, 3, 4)
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water cours	se.	
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous trees an shrubs. Outlet to Wetland 25A provides exp		Rating=Moderate Qualifiers: (1, 2, 5, 6)
General Habitat Suitability	X		Diversity of plant species is moderate. Wetla PFO, PSS, and PEM Cowardin classes. How wetland is surrounded by residential develop	vever,	Rating=Moderate Qualifiers: (4, 5)
Habitat for Aquatic Invertebrates	X		Wetland hydrology has seasonal and occasion inundation.	onal	Rating=Low Qualifers: (1, 6)
Habitat for Amphibians	X		Wetland hydrology has seasonal and occasion inundation.	onal	Rating=Low Qualifiers: (1, 6)
Habitat for Wetland-Associated Mammals		X	No permanent inundation occurs.		
Habitat for Wetland-Associated Birds		X	No permanent inundation occurs.		
General Fish Habitat		X	Wetland is not associated with a fish bearing	; water.	
Native Plant Richness		X	Wetland has three Cowardin classes. Howev non-native invasive vegetation is also co-don ( <i>Phalaris arundinacea</i> ).	ninant	
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; determined significant by local jurisdiction.	not	

 Wetland I.D. 25C
 Project: ______ELST South Sammamish Segment B
 Assessed by: _____Erik Christensen

Cowardin Class: <u>PFO/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.25 acre</u> Date: <u>11/08/07 (rev: 9/25/13)</u>

	Occu	rrence		Principal	
Function/Value	Y	Ν	Rationale	Function(s	
Flood Flow Alteration	X		Wetland likely provides some water retention it is a depression that has evidence of seasons occasional inundation.	al and	Rating=Low
Sediment Removal	X		Dense herbaceous vegetation and ponding of water occur in the wetland.		Rating=Low Qualifiers: (1, 3, 5)
Nutrient & Toxicant Removal	X		Dense herbaceous vegetation is present and seasonal ponding occurs.		Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course	е.	
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous trees and shrubs and a culvert is located at the northeas corner (export).		Rating=Low Qualifiers: (1, 2, 6)
General Habitat Suitability	X		Diversity of plant species is moderate. Wetlat two Cowardin classes. However, wetland is surrounded by residential development.		Rating=Moderate Qualifiers: (4, 5)
Habitat for Aquatic Invertebrates	X		Wetland is seasonally inundated and emerger vegetation is present.	nt	Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Wetland is seasonally inundated. Emergent vegetation and small woody debris is present		Rating=Low Qualifiers: (1, 4, 6)
Habitat for Wetland-Associated Mammals		X	No permanent inundation occurs.		
Habitat for Wetland-Associated Birds		X	No permanent inundation occurs.		
General Fish Habitat		X	Wetland is not associated with a fish bearing	water.	
Native Plant Richness		X	Wetland has two Cowardin classes. However native invasive vegetation is also co-dominar ( <i>Phalaris arundinacea</i> , <i>Rubus armeniacus</i> ).	· · · · · · · · · · · · · · · · · · ·	
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; determined significant by local jurisdiction.	not	

Wetland I.D.	25F	Project:	ELST South Sammamish Segment B	Assessed by: <u>Erik Christensen</u>

Cowardin Class: <u>PFO</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.06 acre</u> Date: <u>11/08/07 (rev: 9/27/13)</u>

	Occur	rrence		Principal	
Function/Value	Y	Ν		unction(s	
Flood Flow Alteration	X		Wetland has dense woody vegetation and is associated with a water course. Function limited by wetland size.		Rating=Low Qualifiers: (5, 6)
Sediment Removal	X		Occasional ponding occurs in wetland.		Rating=Low Qualifiers: (1, 3, 5)
Nutrient & Toxicant Removal	X		Occasional ponding occurs in wetland.		Rating=Low Qualifiers: (1, 4, 6)
Erosion Control & Shoreline Stabilization	X		The wetland is PFO with a water course adjacent to it. Limited association with stream.		Rating=Low Qualifiers: (1, 2, 3)
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous trees and shrubs. Export of nutrients occurs from stream running adjacent to the wetland. Function is limited by wetland size.		Rating=Low Qualifiers: (2, 3, 5, 6)
General Habitat Suitability	X		Diversity of plant species is moderate. Wetland has PFO Cowardin class and is connected to a stream However, wetland is surrounded by residential development and is small.		Rating=Low Qualifiers: (3, 4, 5)
Habitat for Aquatic Invertebrates		X	No seasonal or permanent ponding in wetland.		
Habitat for Amphibians		X	No seasonal or permanent ponding in wetland.		
Habitat for Wetland-Associated Mammals		X	Permanent ponding does not occur in wetland.		
Habitat for Wetland-Associated Birds		X	No open water component present.		
General Fish Habitat	X		Wetland has a PFO Cowardin class that offer shade, cover, and detrital matter for the stream. Limited association with stream.		Rating=Low Qualifiers: (1, 4)
Native Plant Richness		X	Wetland has one Cowardin class. Non-native invasive vegetation is co-dominant ( <i>Phalaris arundinacea</i> ).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

 Wetland I.D.
 26A
 Project:
 ELST South Sammamish Segment B
 Assessed by:
 Erik Christensen

Cowardin Class: <u>PFO/PSS/PEM</u> Ecology Category: <u>III</u> Local Rating: <u>III</u> Wetland size: <u>0.91 acre</u> Date: <u>11/09/07</u> (rev: <u>9/27/13</u>)

	Occu	rrence		rincipal	
Function/Value	Y	Ν	-	nction(s)	
Flood Flow Alteration	X		Wetland has dense woody vegetation and is associated with a water course.		Rating=Low Qualifiers: (5, 6)
Sediment Removal	X		Seasonal ponding occurs in portion of the wetland.		Rating=Low Qualifiers: (1, 3, 5)
Nutrient & Toxicant Removal	X		Seasonal ponding occurs in portion of the wetland.		Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization	X		The wetland is associated with Zaccuse Creek and has woody vegetation. Limited association with stream.		Rating=Low Qualifiers: (1, 2, 3)
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous shrubs. Stream running through wetland provides export of nutrients. Limited association with stream.		Rating=Low Qualifiers: (1, 2, 3, 5, 6)
General Habitat Suitability	X		Diversity of plant species is moderate. Wetland has three Cowardin classes and is connected to a stream. However, wetland is surrounded by residential development and roads.	5	Rating=Moderate Qualifiers: (3, 4, 5)
Habitat for Aquatic Invertebrates	X		Seasonal inundation occurs. Wetland has three Cowardin classes which produce leaf litter and is connected to a stream.		Rating=Low Qualifiers: (1, 5, 6)
Habitat for Amphibians	X		Seasonal inundation occurs. The wetland is connected to a stream.		Rating=Low Qualifiers: (1, 6)
Habitat for Wetland-Associated Mammals		X	Permanent ponding does not occur in wetland.		
Habitat for Wetland-Associated Birds		X	No open water occurs in the wetland.		
General Fish Habitat	X		Wetland has a PSS Cowardin class that offers shade, cover, and detrital matter for the stream. Limited association with stream.		Rating=Low Qualifiers: (1, 4)
Native Plant Richness		X	Wetland has three Cowardin classes. However, non-native invasive vegetation is co-dominant ( <i>Phalaris arundinacea</i> ).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

 Wetland I.D. <u>26B</u>
 Project: <u>ELST South Sammamish Segment B</u>
 Assessed by: <u>M. Maynard</u>

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.02 acre</u> Date: <u>11/02/07 (rev: 3/20/14)</u>

	Occurr	ence			ncipal	
Function/Value		N	Rationale		tion(s)	Comments
Flood Flow Alteration		X	Wetland likely does not provide this function it is a slope HGM class.	n since		
Sediment Removal		X	Wetland likely does not provide this function since it is a slope HGM class and is maintain lawn/yard.			
Nutrient & Toxicant Removal		X	Wetland likely does not provide this function it is a slope HGM class and is maintained lawn/yard.			
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course	e.		
Production of Organic Matter and its Export		X	The wetland has at least 30% cover of herbac vegetation, but no inundation and no outlet for export.	or		
General Habitat Suitability		X	This is a small wetland on maintained lawn/y near other wetlands, but connectivity is fragment by driveways.			
Habitat for Aquatic Invertebrates		X	Wetland is sloped and no inundation occurs.			
Habitat for Amphibians		X	Wetland is sloped and no inundation occurs.			
Habitat for Wetland-Associated Mammals		X	Wetland is sloped and no inundation occurs.			
Habitat for Wetland-Associated Birds		X	Wetland is sloped and no inundation occurs.			
General Fish Habitat		X	Wetland is not associated with a fish-bearing water.			
Native Plant Richness		X	Wetland is dominated by lawn.			
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.			
Uniqueness and Heritage		X	No documented protected species or habitat; determined significant by local jurisdiction.	not		

 Wetland I.D. <u>26C</u>
 Project: ______ELST South Sammamish Segment B
 Assessed by: _____M. Maynard

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.03 acre</u> Date: <u>11/2/07 (rev: 3/20/14)</u>

	Occur	rence	2	Principal	
Function/Value	Y	Ν		Function(s)	) Comments
Flood Flow Alteration	X		Wetland provides minimal support based on size its flat shape, and is mostly maintained lawn/yar		Rating: Low
Sediment Removal	X		Wetland provides minimal support based on size its flat shape, and is mostly maintained lawn/yard.	2,	Rating: Low
Nutrient & Toxicant Removal	X		Wetland provides minimal support based on size its flat shape, and is mostly maintained lawn/yar		Rating: Low
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course.		
Production of Organic Matter and its Export		X	The wetland has at least 30% cover of herbaceor vegetation, but is mostly maintained lawn, lacks inundation, and lacks connection to downgradie aquatic areas for export.		
General Habitat Suitability	X		Majority of wetland is maintained lawn. The wetland is near other wetlands, but connectivity fragmented by driveways.	is	Rating: Low
Habitat for Aquatic Invertebrates		X	No inundation occurs.		
Habitat for Amphibians		X	No inundation occurs.		
Habitat for Wetland-Associated Mammals		X	No inundation occurs.		
Habitat for Wetland-Associated Birds		X	No inundation occurs.		
General Fish Habitat		X	Wetland is not associated with a fish-bearing water.		
Native Plant Richness		X	Wetland is mostly lawn, with some native specie in the shrub community.	es	
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

Wetland I.D. <u>26D</u>	Project: <u>ELST Sout</u>	h Sammamish Segment B	Asses	sed by: _	Colin Worsley
Cowardin Class: <u>PSS/PEM</u>	Ecology Category: III	Local Rating: <u>III</u> Wetland size:	~0.13 acre	Date:	03/19/14

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	Occu	rrence	2	Principal	
Function/Value	Y	Ν		unction(s	/
Flood Flow Alteration	X		Wetland likely provides minimal support for this function since it has lake-fringe and riverine HG classes with no constricted outlet.		Rating=Low Qualifiers: (6)
Sediment Removal	X		Wetland likely provides minimal support for this function.		Rating=Low Qualifiers: (1)
Nutrient & Toxicant Removal	X		Wetland likely provides minimal support for this function.		Rating=Low Qualifiers: (1, 5)
Erosion Control & Shoreline Stabilization	X		Wetland is associated with one unnamed stream (#9) and the shoreline of Lake Sammamish. However, vegetation composition and condition limits this function.		Rating=Low
Production of Organic Matter and its Export	X		The wetland has deciduous shrub and herbaceouvegetation. Some organic matter may be exported via the associated unnamed stream (#9) and the shoreline of Lake Sammamish.	~	Rating=Low Qualifiers: (1, 2, 6)
General Habitat Suitability	X		PSS and PEM Cowardin classes are present. Wetland is surrounded by residential development	nt.	Rating=Low Qualifiers: (3, 5)
Habitat for Aquatic Invertebrates	X		Wetland is lake-fringe and has a perennial stream flowing through it.	n	Rating=Low Qualifiers: (6)
Habitat for Amphibians	X		Wetland has lake-fringe HGM class and a perennial stream flowing through it.		Rating=Low Qualifiers: (6)
Habitat for Wetland-Associated Mammals	X		Wetland has lake-fringe HGM class and a perennial stream flowing through it.		Rating=Low
Habitat for Wetland-Associated Birds	X		Wetland has lake-fringe HGM class (Lake Sammamish).		Rating=Low
General Fish Habitat	X		Wetland has lake-fringe HGM class and a perennial stream flowing through it.		Rating=Low
Native Plant Richness	X		Wetland has two Cowardin classes and has been planted as part of a restoration project.		Rating=Low
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

 Wetland I.D. <u>28A</u>
 Project: ______ELST South Sammamish Segment B_____
 Assessed by: _____Erik Christensen

Cowardin Class: <u>PFO</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.09 acre</u> Date: <u>11/13/07 (rev: 09/27/13)</u>

	Occu	rrence	e P	rincipal	
Function/Value	Y	Ν		nction(s)	) Comments
Flood Flow Alteration	X		Wetland has dense woody vegetation and is associated with a water course. However, dense wood vegetation is not located in the water course		Rating=Low Qualifiers: (5, 6)
Sediment Removal	X		Permanent ponding occurs in the ditched portion of the wetland at the toe of slope.		Rating=Low Qualifiers: (1, 3, 5)
Nutrient & Toxicant Removal	X		Permanent ponding occurs in the ditched portion of the wetland at the toe of slope.	of	Rating=Low Qualifiers: (1, 2)
Erosion Control & Shoreline Stabilization	X		The wetland has a Cowardin class of PFO with a water course flowing through it.		Rating=Moderate Qualifiers: (1, 2, 3)
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous trees and shrubs. Export of nutrients occurs from stream running through the wetland		Rating=Moderate Qualifiers: (2, 6)
General Habitat Suitability	X		Wetland is associated with a stream. However, wetland is surrounded by residential development and roads.		Rating=Low Qualifiers: (3)
Habitat for Aquatic Invertebrates	X		Permanent inundation occurs in the ditch. The wetland has deciduous plants which produces leaf litter and is associated with a stream.		Rating=Moderate Qualifiers: (1, 5, 6)
Habitat for Amphibians	X		Permanent inundation and emergent vegetation occurs in the ditch. The wetland is associated with a stream. However, there is development surrounding the wetland.		Rating=Low Qualifiers: (1, 4, 6)
Habitat for Wetland-Associated Mammals		X	Permanent ponding is insufficient for wetland- associated mammals.		
Habitat for Wetland-Associated Birds		X	No open water occurs in the wetland		
General Fish Habitat	X		Wetland has a PFO Cowardin class that offers shade, cover, and detrital matter for associated stream, which is potentially fish-bearing.		Rating=Low Qualifiers: (4)
Native Plant Richness		X	Non-native invasive vegetation is codominant ( <i>Phalaris arundinacea, Rubus armeniacus</i> ).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

 Wetland I.D. <u>28B</u>
 Project: _______ELST South Sammamish Segment B
 Assessed by: ______Erik Christensen

Cowardin Class: <u>PSS</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.02 acre</u> Date: <u>11/09/07 (rev: 09/27/13)</u>

	Occur	rence		Principal	
Function/Value	Y	Ν		Function(s	comments
Flood Flow Alteration		X	Wetland likely does not provide this function si wetland is sloped and no qualifiers are present.	nce	
Sediment Removal		X	Wetland likely does not provide this function since wetland is sloped and no qualifiers are present.		
Nutrient & Toxicant Removal		X	Wetland is sloped. No qualifiers are present.		
Erosion Control & Shoreline Stabilization		X			
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous shrubs. Export of nutrients occurs to ditch below the wetland.		Rating=Low Qualifiers: (2, 6)
General Habitat Suitability		X	Wetland is surrounded by residential development and roads.	ent	
Habitat for Aquatic Invertebrates		X	Wetland likely does not provide this function since it occasionally innundated.		
Habitat for Amphibians		X	Wetland likely does not provide this function si it occasionally inundated.	nce	
Habitat for Wetland-Associated Mammals		X	Permanent ponding does not occur in wetland.		
Habitat for Wetland-Associated Birds		X	No open water occurs in the wetland.		
General Fish Habitat		X	Wetland is not associated with a fish bearing wa	ater.	
Native Plant Richness		X	Non-native invasive vegetation is codominant ( <i>Rubus armeniacus/Phalaris arundinacea</i> ).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; no determined significant by local jurisdiction.	t	

 Wetland I.D. <u>28C</u>
 Project: <u>ELST South Sammamish Segment B</u>
 Assessed by: <u>Matt Maynard</u>

Cowardin Class: <u>PSS/PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.02 acre</u> Date: <u>11/13/07 (rev: 09/27/13)</u>

	Occu	rence		rincipal	
Function/Value	Y	Ν		nction(s)	) Comments
Flood Flow Alteration	X		Wetland likely provides some support for this function since it is a small depressional wetland. The wetland is dominated by herbaceous vegetation.		Rating=Low Qualifiers: (2)
Sediment Removal	X		A vegetated ditch with slow moving, seasonal water is located in the wetland.		Rating=Low Qualifiers: (1, 2, 3)
Nutrient & Toxicant Removal	X		A vegetated ditch with seasonal inundation is located in the wetland. Wetland receives runoff from the trail and a slope to the east.		Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a shoreline.		
Production of Organic Matter and its Export	X		The wetland has at least 30% cover of herbaceous vegetation and has outlets for exporting organic matter.		Rating=Low Qualifiers: (1, 6)
General Habitat Suitability	X		The wetland is fragmented by East Lake Sammamish Parkway, residential development, and the trail. Limited connectivity to upland slope.		Rating=Low Qualifiers: (1, 3)
Habitat for Aquatic Invertebrates	X		Seasonal inundation and emergent vegetation occur in the ditch.		Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Seasonal inundation and emergent vegetation occur in the ditch.		Rating=Low Qualifiers: (1, 2, 6)
Habitat for Wetland-Associated Mammals		X	Permanent inundation does not occur.		
Habitat for Wetland-Associated Birds		X	Permanent inundation and open water do not occur.		
General Fish Habitat		X	Wetland is not associated with a fish bearing water.		
Native Plant Richness		X	Codominant vegetation is non-native (unknown ornamental).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.		

Wetland I.D. 28D	Project:	ELST South Sammamish Segment B	Assessed by: _	Erik Christensen

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u><0.01 acre</u> Date: <u>11/13/07 (rev: 09/27/13)</u>

	Occu			Principal	
Function/Value	Y	Ν	Rationale	Function(s	) Comments
Flood Flow Alteration		X	Wetland is a ditch. No qualifiers are present		
Sediment Removal		X	Wetland is a ditch. No qualifiers are present		
Nutrient & Toxicant Removal		X	Wetland is a ditch. No qualifiers are present		
Erosion Control & Shoreline Stabilization	X		The wetland is has a Cowardin class of PEM an occasionally flowing water course through		Rating=Moderate Qualifiers: (1, 2)
Production of Organic Matter and its Export	X		Wetland is dominated by deciduous shrubs. Export of nutrients occurs from stream runnin through the wetland	g	Rating=Moderate Qualifiers: (2, 6)
General Habitat Suitability		X	Wetland is a ditch and is surrounded by reside development and roads.	ential	
Habitat for Aquatic Invertebrates		X	Wetland is a ditch with occasional inundation		
Habitat for Amphibians		X	Wetland is a ditch with occasional inundation.		
Habitat for Wetland-Associated Mammals		X	Permanent ponding suitable for mammals doe occur in wetland.	s not	
Habitat for Wetland-Associated Birds		X	No open water occurs in the wetland		
General Fish Habitat		X	Wetland is not associated with a fish bearing w	water.	
Native Plant Richness		X	Non-native invasive vegetation is codominate ( <i>Rubus armeniacus</i> ).		
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; n determined significant by local jurisdiction.	not	

Wetland I.D. <u>28E</u> P	roject:	EL	ST South Sammamish Segment B Assess	sed by: Matt Maynard/Colin Worsley
Cowardin Class: <u>PEM</u> E	cology	Cate	gory: <u>IV</u> Local Rating: <u>IV</u> Wetland siz	ze: <u>0.02 acre</u> Date: <u>11/01/13</u>
	Occur	rrence		ipal
Function/Value	Y	Ν	Rationale Function	
Flood Flow Alteration	X		Wetland is a small, closed depressional system with surface water limited to ditch, has capacity for very minimal water detention.	Rating=Low Qualifiers: (3)
Sediment Removal	X		Wetland may receive some sediment from trail. Surface water limited to ditch.	Rating=Low Qualifiers: (1, 3)
Nutrient & Toxicant Removal	X		May receive nutrients/ toxicants from adjacent roadways and residences. The wetland is a closed depressional system. Surface water limited to ditch.	Rating=Low Qualifiers: (1, 4)
Erosion Control & Shoreline Stabilization		X	Wetland is not associated with a water course or shoreline.	
Production of Organic Matter and its Export		X	Dense vegetation is present in wetland, but the wetland is a closed depressional system with no outlet.	
General Habitat Suitability		X	Wetland is a small depression adjacent to trail and residences with one Cowardin class (PEM).	
Habitat for Aquatic Invertebrates		X	Surface water limited to ditch.	
Habitat for Amphibians		X	Surface water limited to ditch.	
Habitat for Wetland-Associated Mammals		X	Insufficient ponding for wetland-associated mammals.	
Habitat for Wetland-Associated Birds		X	No open water component in the wetland.	
General Fish Habitat		X	Wetland is not associated with a fish bearing water.	
Native Plant Richness		X	Wetland has one Cowardin class and vegetation is dominated by invasive species.	
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.	
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction.	

 Wetland I.D. 29B
 Project:
 ELST South Sammamish Segment B
 Assessed by:
 M. Maynard

Cowardin Class: <u>PEM</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.03 acre</u> Date: <u>11/08/07 (rev: 09/27/13)</u>

	Occur	rence	e	Principal	
Function/Value	Y	Ν	Rationale	Function(s	comments
Flood Flow Alteration		X	Wetland likely does not provide this functi it is a slope HGM class and is maintained lawn/yard.	on since	
Sediment Removal		X	Wetland likely does not provide this functi since it is a slope HGM class and is mainta lawn/yard.		
Nutrient & Toxicant Removal		X	Wetland likely does not provide this function it is a slope HGM class.	on since	
Erosion Control & Shoreline Stabilization		X	Wetland likely does not provide this functi since it is a slope HGM class and is not associated with a water course.	on	
Production of Organic Matter and its Export		X	Wetland is densely vegetated with herbace vegetation. However, inundation does not of and organic material export is minimal.		
General Habitat Suitability		X	Wetland is a maintained yard and connectivity fragmented by residential development.	vity is	
Habitat for Aquatic Invertebrates		X	Wetland has a slope HGM class and is satuonly. Inundation does not occur.	rated	
Habitat for Amphibians		X	Wetland has a slope HGM class and is satu only. Inundation does not occur.	rated	
Habitat for Wetland-Associated Mammals		X	Wetland has a slope HGM class and is satu only. Inundation does not occur.	rated	
Habitat for Wetland-Associated Birds		X	Wetland has a slope HGM class and is satu only. Inundation does not occur.	rated	
General Fish Habitat		X	Wetland is not associated with a fish-bearin water.	ng	
Native Plant Richness		X	The wetland is a maintained lawn dominate mowed grass.	ed by	
Educational or Scientific Value		X	There is no nearby parking & the site has n documented scientific or educational use.	0	
Uniqueness and Heritage	_	X	No documented protected species or habita determined significant by local jurisdiction		

Wetland I.D. 29C	Project:	ELST South Sa	mman	nish Segment B		Assessed by: <u>1</u>	M. Maynard
Cowardin Class: <u>PFO</u> Ecolo	ogy Category: <u>IV</u>	Local Rating:	IV	Wetland size: _	0.06 acre	Date: <u>11/08/07 (r</u>	ev: 03/20/14)

	Occu			Principal	
Function/Value	Y	Ν	Rationale	Function(s	) Comments
Flood Flow Alteration		X	Wetland likely does not provide this function.		
Sediment Removal	X		Wetland likely provides minimal support for t function.	his	Rating=Low
Nutrient & Toxicant Removal	X		Wetland likely provides minimal support for the function.	his	Rating=Low
Erosion Control & Shoreline Stabilization	X		Wetland likely provides minimal support for t function. Associated with Lake Sammamish.	his	Rating=Low
Production of Organic Matter and its Export	X		Wetland is densely covered with herbaceous vegetation and drains into a stream to the sout the wetland and Lake Sammamish.		Rating=Moderate Qualifiers: (1, 5, 6)
General Habitat Suitability	X		Wetland is small and connectivity is fragmented	ed.	Rating=Low
Habitat for Aquatic Invertebrates	X		Ditch is vegetated with emergent vegetation at is seasonally inundated. A stream is located so of the wetland and Lake Sammamish to the we	outh	Rating=Low Qualifiers: (1, 4, 6)
Habitat for Amphibians	X		Ditch is vegetated with emergent vegetation and seasonally inundated. A stream is located sout the wetland and Lake Sammamish to the west		Rating=Low Qualifiers: (1, 2, 6)
Habitat for Wetland-Associated Mammals	X		No permanent inundation occurs in the wetlan Connected to Lake Sammamish.	d.	Rating=Low
Habitat for Wetland-Associated Birds	X		No open water occurs in the wetland. Connect Lake Sammamish.	ed to	Rating=Low
General Fish Habitat	X		Connected to Lake Sammamish.		Rating=Low
Native Plant Richness	X		Dominate vegetation in wetland is native.		Rating=Low Qualifiers: (1)
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; n determined significant by local jurisdiction.	ot	

 Wetland I.D. 29D
 Project:
 ELST South Sammamish Segment B
 Assessed by:
 M. Maynard

Cowardin Class: <u>PEM/PSS</u> Ecology Category: <u>IV</u> Local Rating: <u>IV</u> Wetland size: <u>0.08 acre</u> Date: <u>11/13/07 (rev: 09/27/13)</u>

	Occu	rrence	•	Principal	
Function/Value	Y	Ν	Rationale	Function(s	
Flood Flow Alteration	X		Wetland likely provides this function, althou limited capacity due to the depressional porti- being ditched.		Rating=Low Qualifiers: (2)
Sediment Removal	X		Wetland is densely vegetated, but sediment sources are limited.		Rating=Low Qualifiers: (3, 5)
Nutrient & Toxicant Removal	X		Wetland is densely vegetated and some toxic may be provided by road or trail.	ants	Rating=Low Qualifiers: (1, 2, 4)
Erosion Control & Shoreline Stabilization	X		Wetland is densely vegetated, but water flow limited through Wetland 29D.	is	Rating=Low Qualifiers: (1, 2, 3)
Production of Organic Matter and its Export	X		Wetland is densely covered with herbaceous vegetation and drains into a stream.to the nor the wetland.	th of	Rating=Moderate Qualifiers: (1, 2, 5, 6)
General Habitat Suitability	X		Wetland is connectivity is fragmented, but we has multiple Cowardin classes.	etland	Rating=Low Qualifiers: (5)
Habitat for Aquatic Invertebrates		X	Wetland likely does not provide this function since wetland does not appear to be seasonal inundated and when ponding occurs, is shall	ly	
Habitat for Amphibians		X	Wetland likely does not provide this function wetland does not appear to be seasonally inur and when ponding occurs, is shallow.		
Habitat for Wetland-Associated Mammals		X	No permanent inundation occurs in the wetla	nd.	
Habitat for Wetland-Associated Birds		X	No open water occurs in the wetland.		
General Fish Habitat		X	Wetland likely does not provide this function it is not associated with a stream.	since	
Native Plant Richness	X		Dominate vegetation in wetland is not native, wetland has multiple Cowardin classes with t strata.		Rating=Low Qualifiers: (2, 3)
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.		
Uniqueness and Heritage		X	No documented protected species or habitat; determined significant by local jurisdiction.	not	

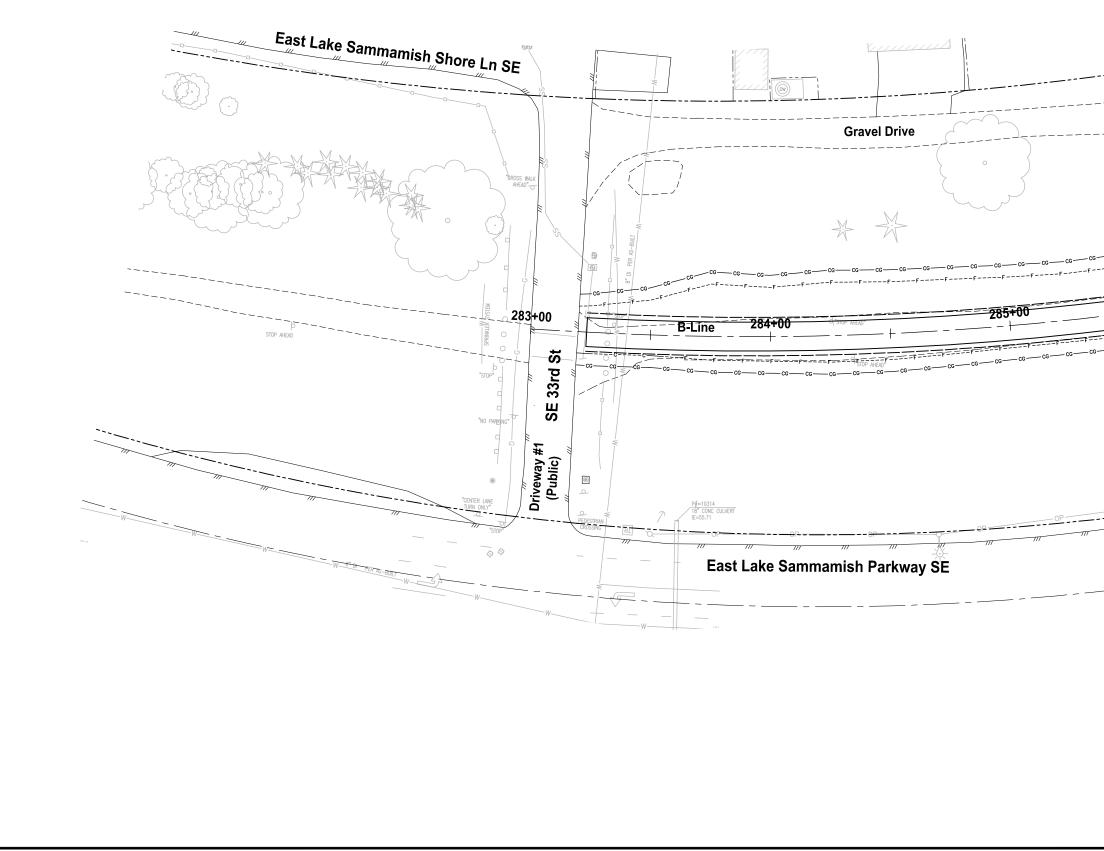
 Wetland I.D. 30B
 Project:
 ELST South Sammamish Segment B
 Assessed by: Erik Christensen

 Cowardin Class: PFO
 Ecology Category: III
 Local Rating: III
 Wetland size: _0.20 acre_
 Date: 01/11/08 (rev: 09/27/13)

	Occu	rrence	e Pr	rincipal
Function/Value	Y	Ν		nction(s) Comments
Flood Flow Alteration	X		Wetland contains a vegetated ditch that is permanently ponded.	Rating=Low Qualifiers: (4, 5)
Sediment Removal	X		Wetland contains a vegetated ditch that is permanently ponded.	Rating=Low Qualifiers: (1, 3, 5)
Nutrient & Toxicant Removal	X		Wetland receives runoff from upslope towards East Lake Sammamish Parkway and is densely vegetated.	Rating=Moderate Qualifiers: (1, 4)
Erosion Control & Shoreline Stabilization	X		Wetland is associated with Tributary 0143L with vegetation growing in channel.	Rating=Low
Production of Organic Matter and its Export	X		Wetland is densely vegetated with herbaceous and deciduous woody vegetation. Export occurs through Tributary 0143L.	Rating= Moderate Qualifiers: (1, 2, 3, 6)
General Habitat Suitability	X		Wetland is a mitigation site and has been enhanced with vegetation and habitat structures.	Rating= Moderate Qualifiers: (3, 5)
Habitat for Aquatic Invertebrates	X		Wetland is associated with Tributary 0143L and also contains a vegetated ditch that is seasonally ponded.	Rating=Moderate Qualifiers: (4, 5, 6)
Habitat for Amphibians	X		Wetland is associated with Tributary 0143L and also contains a vegetated ditch that is seasonally ponded.	Rating=Moderate Qualifiers: (1, 2)
Habitat for Wetland-Associated Mammals		X	No permanent inundation occurs in the wetland.	
Habitat for Wetland-Associated Birds		X	No open water occurs in the wetland.	
General Fish Habitat	X		Wetland is associated with Tributary 0143L.	Rating=Moderate Qualifiers: (1, 4)
Native Plant Richness	X		Wetland contains mature trees, and is dominated by native vegetation with some invasive species.	Rating=Moderate Qualifiers: (1, 2, 3, 4)
Educational or Scientific Value		X	There is no nearby parking & the site has no documented scientific or educational use.	
Uniqueness and Heritage		X	No documented protected species or habitat; not determined significant by local jurisdiction	

## APPENDIX D

Critical Area Impact Figures



Parametrix DATE: August 31, 2016 FILE: BL1521075P19T09F-01



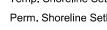
#### Data Plot Wetland Boundary Wetland Buffer Stream Buffer Stream OHWM Stream Centerline Ditch

_··-	Lake OHWM
	Shoreline Setback
	Right of Way
	Retaining Walls
—FF—	Fill Limit
c	Cut Limit
cccc	Clearing/Grubbing Limit

Temp. Wetland Impact Perm. Wetland Buffer Impact Temp. Wetland Buffer Impact Perm. Stream Buffer Impact

Temp. Shoreline Setback Impact Perm. Shoreline Setback Impact

Temp. Stream Buffer Impact



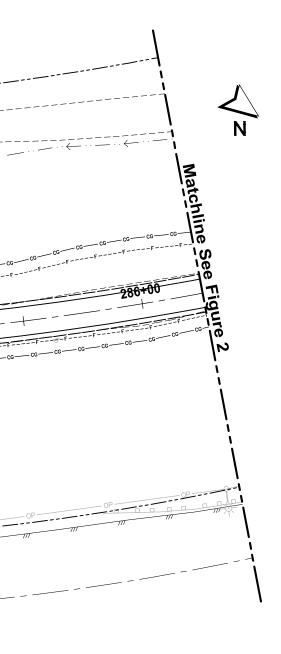
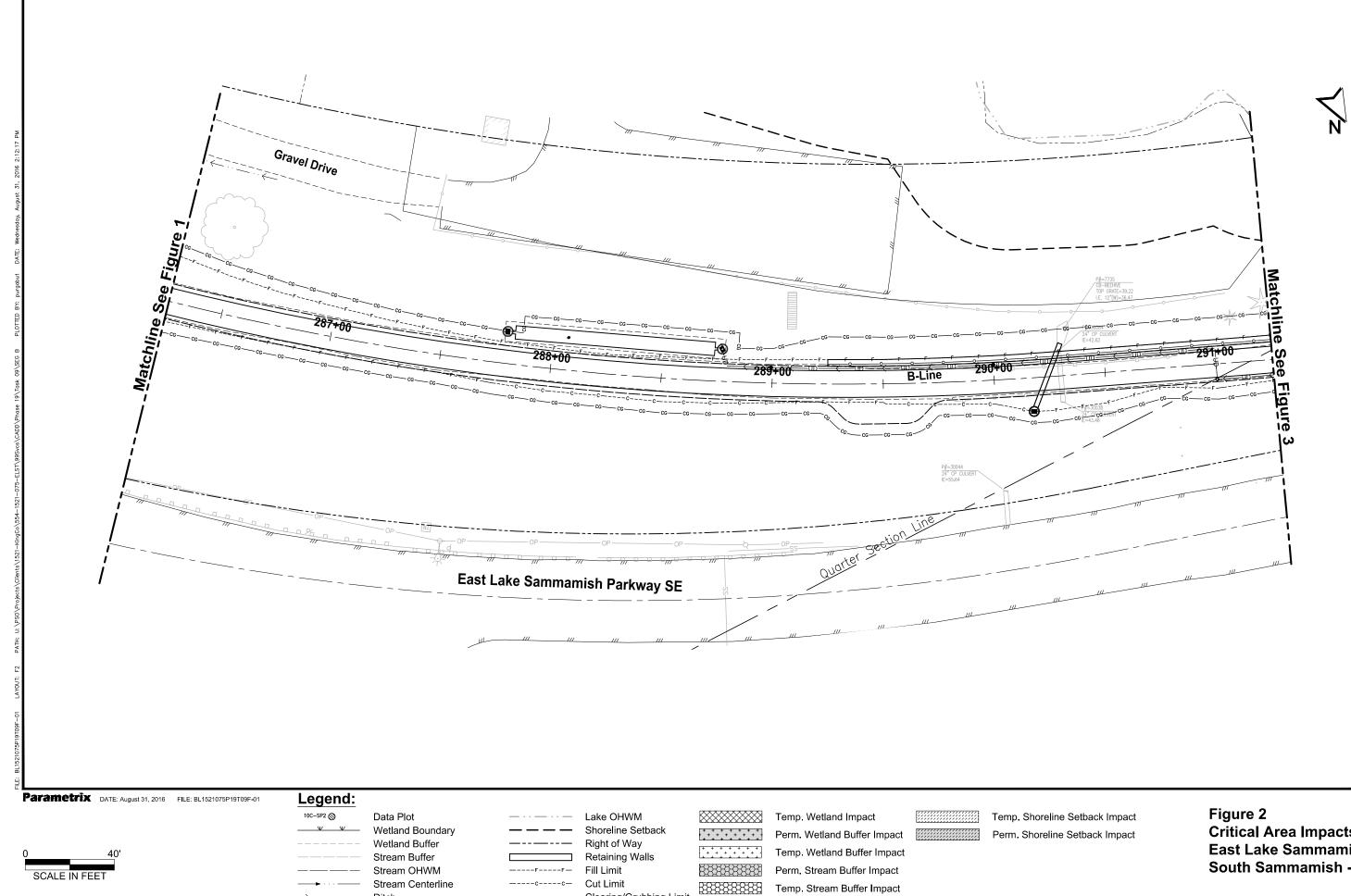


Figure 1 **Critical Area Impacts** East Lake Sammamish Trail South Sammamish - Segment B

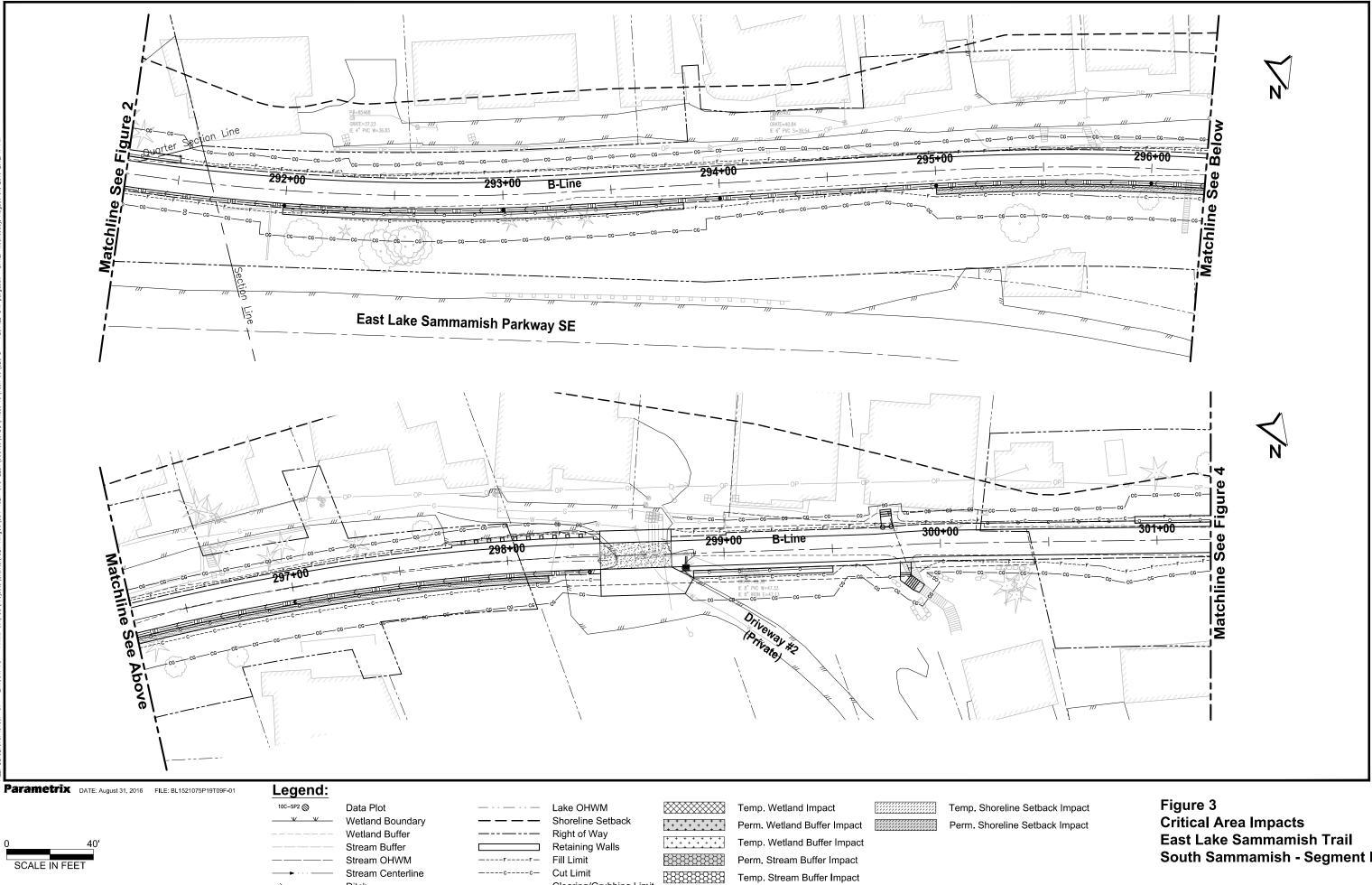


Clearing/Grubbing Limit

Ditch

____

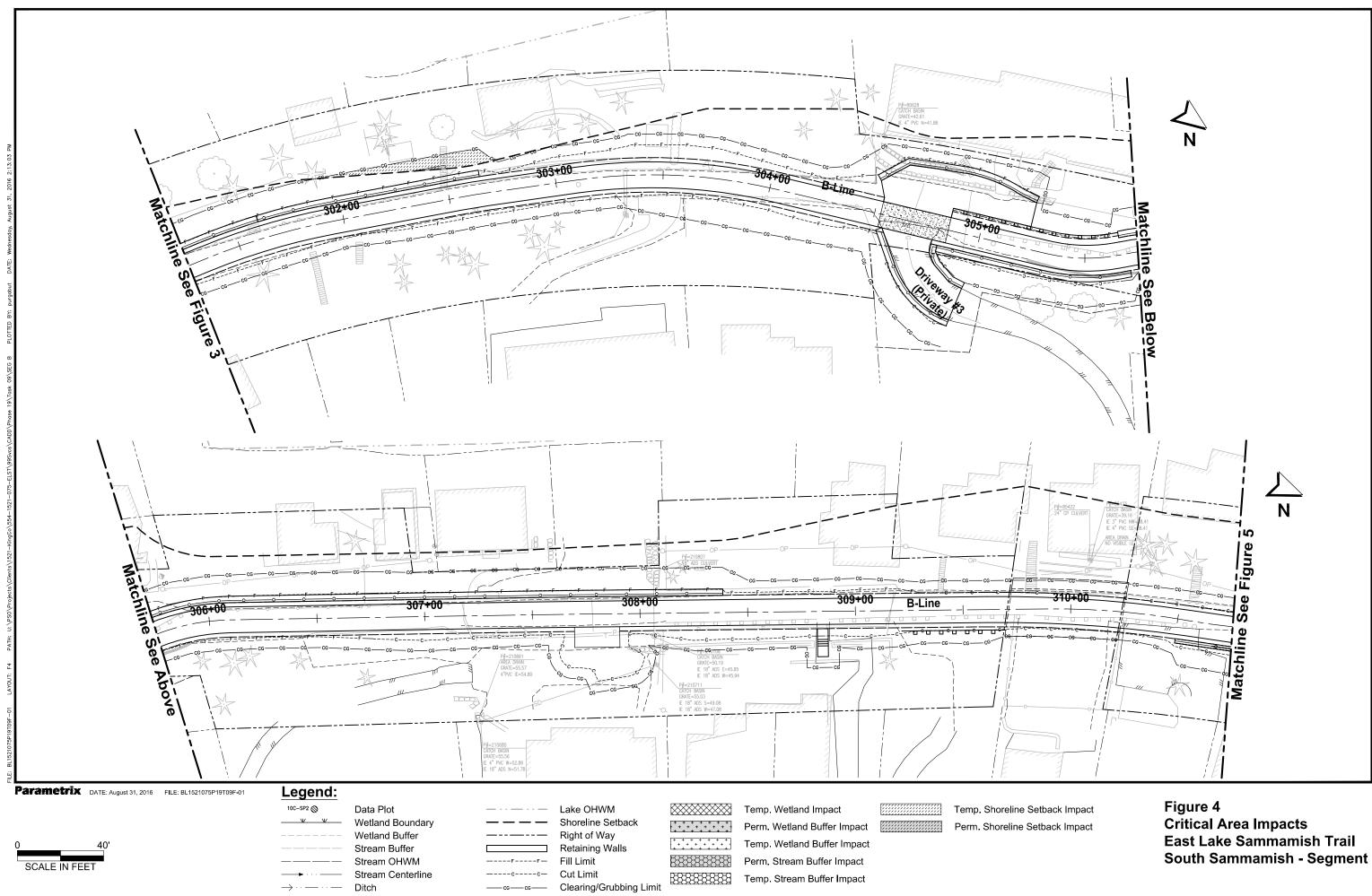
**Critical Area Impacts** East Lake Sammamish Trail South Sammamish - Segment B

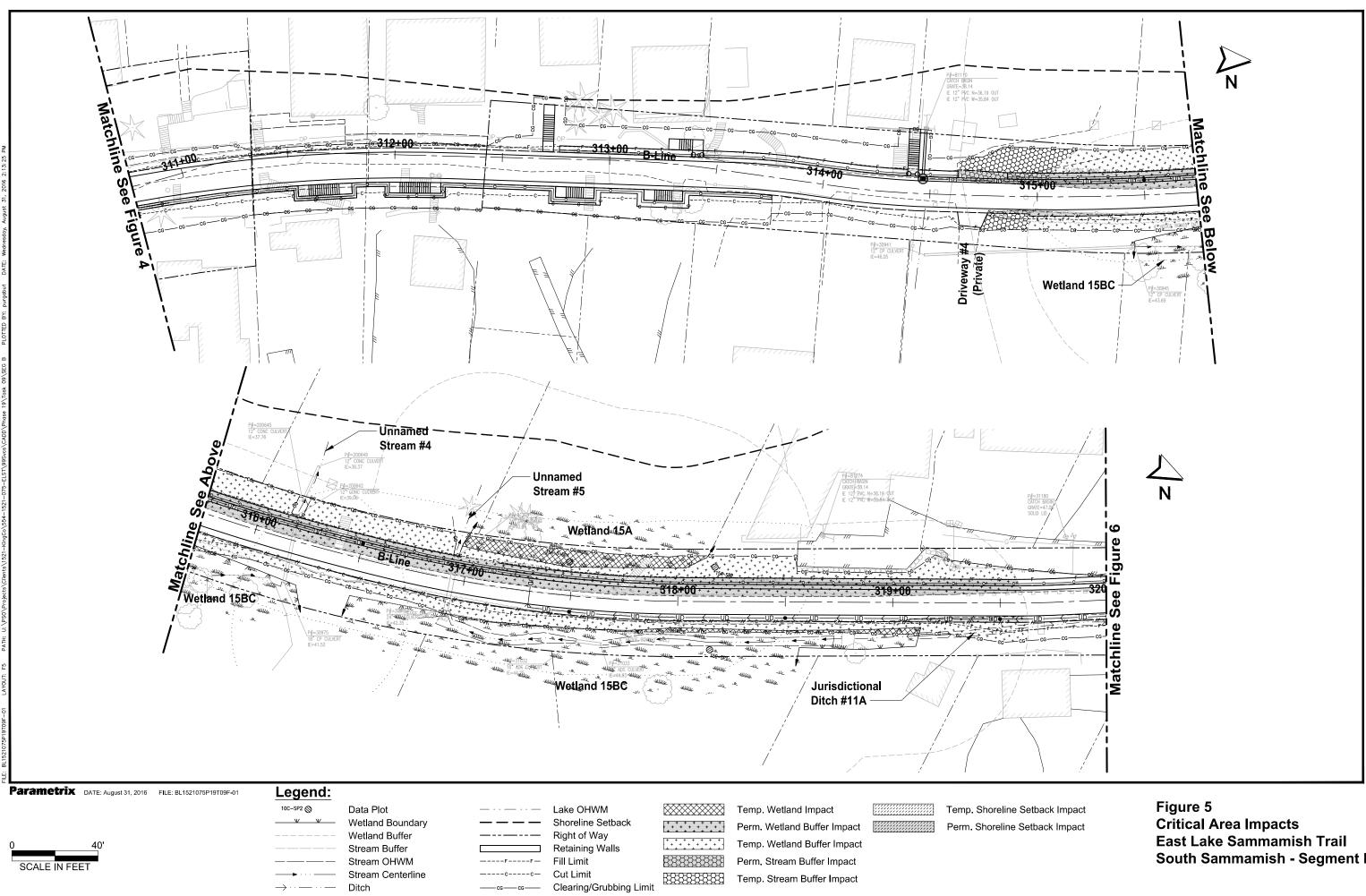


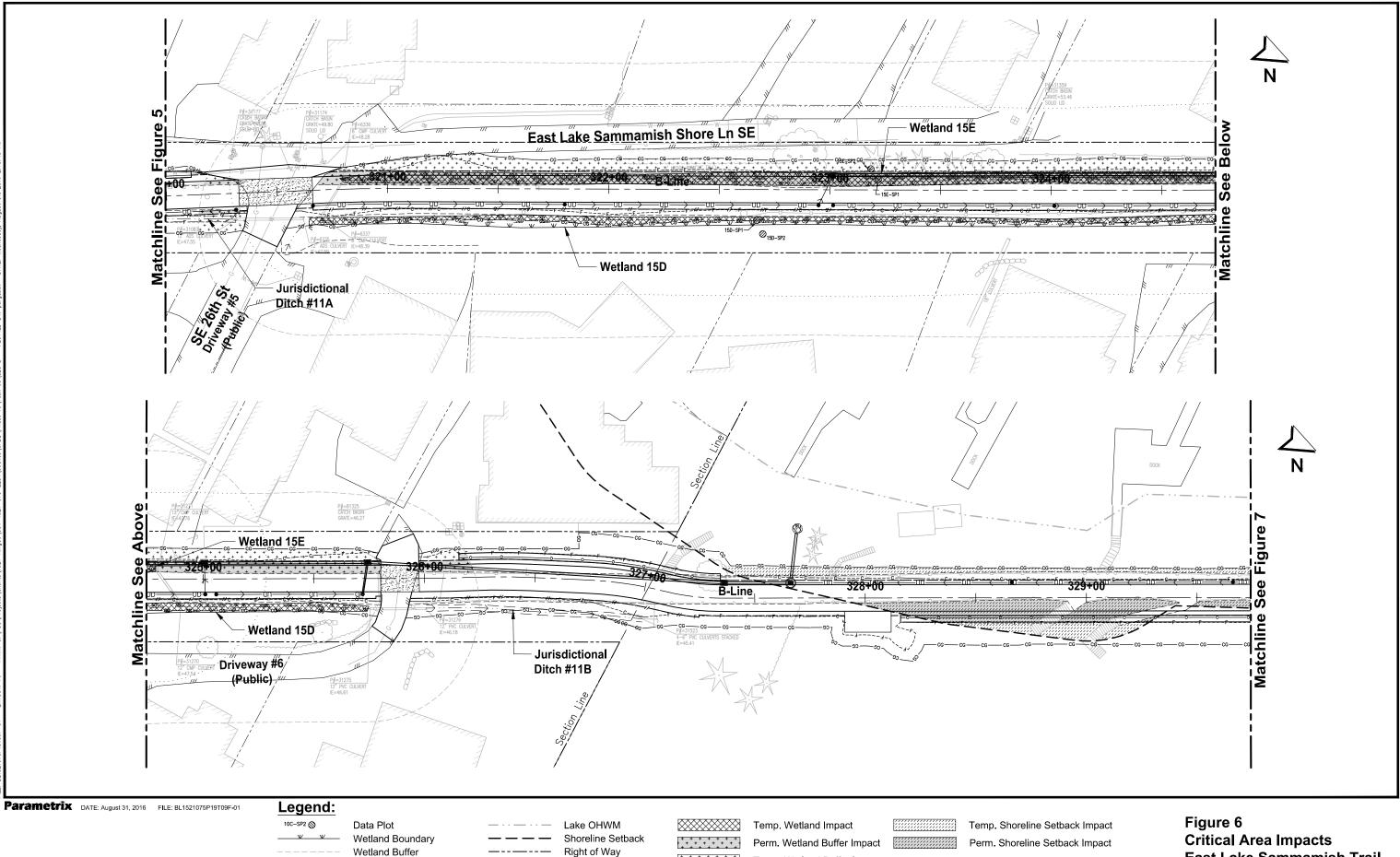
-∞— Clearing/Grubbing Limit

Ditch

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SCALE IN FEET

Wetland Buffer Stream Buffer Stream OHWM Stream Centerline Ditch _

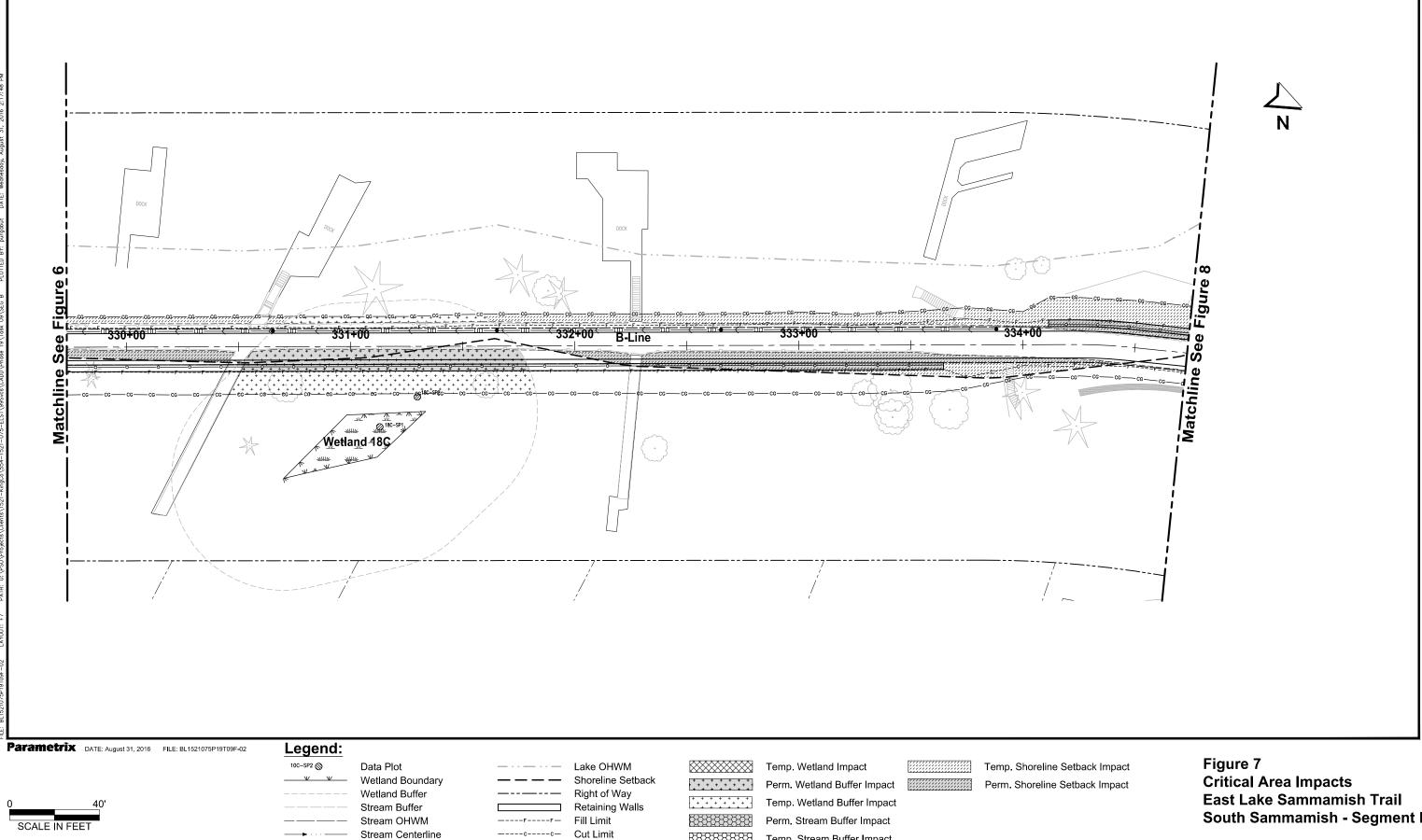
____ Retaining Walls --F- Fill Limit ---- Cut Limit

Clearing/Grubbing Limit

•<u>+</u>++++++++++ 

Temp. Wetland Buffer Impact Perm. Stream Buffer Impact Temp. Stream Buffer Impact

East Lake Sammamish Trail South Sammamish - Segment B

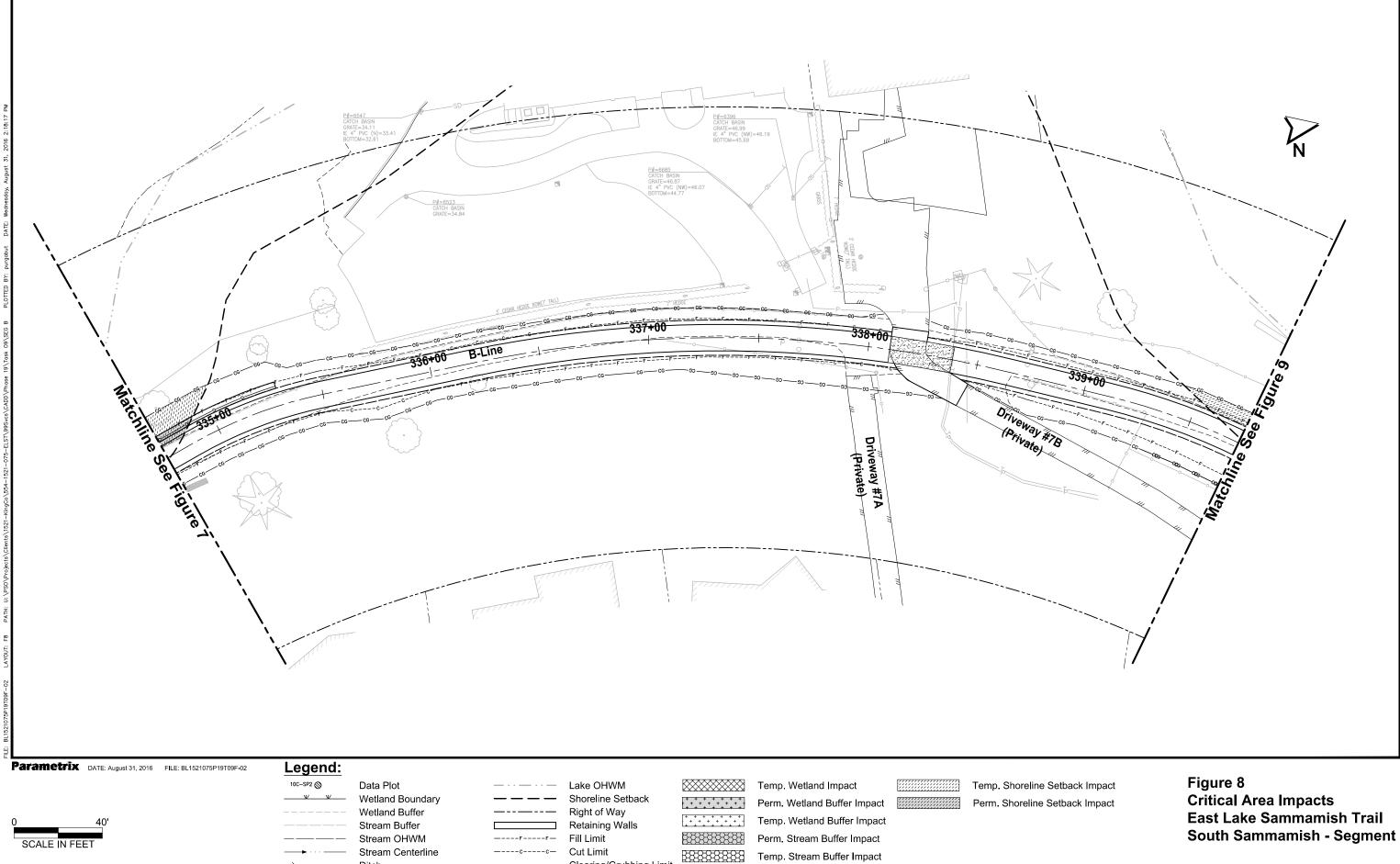


Clearing/Grubbing Limit

CG —— DD

Ditch

Temp. Stream Buffer Impact

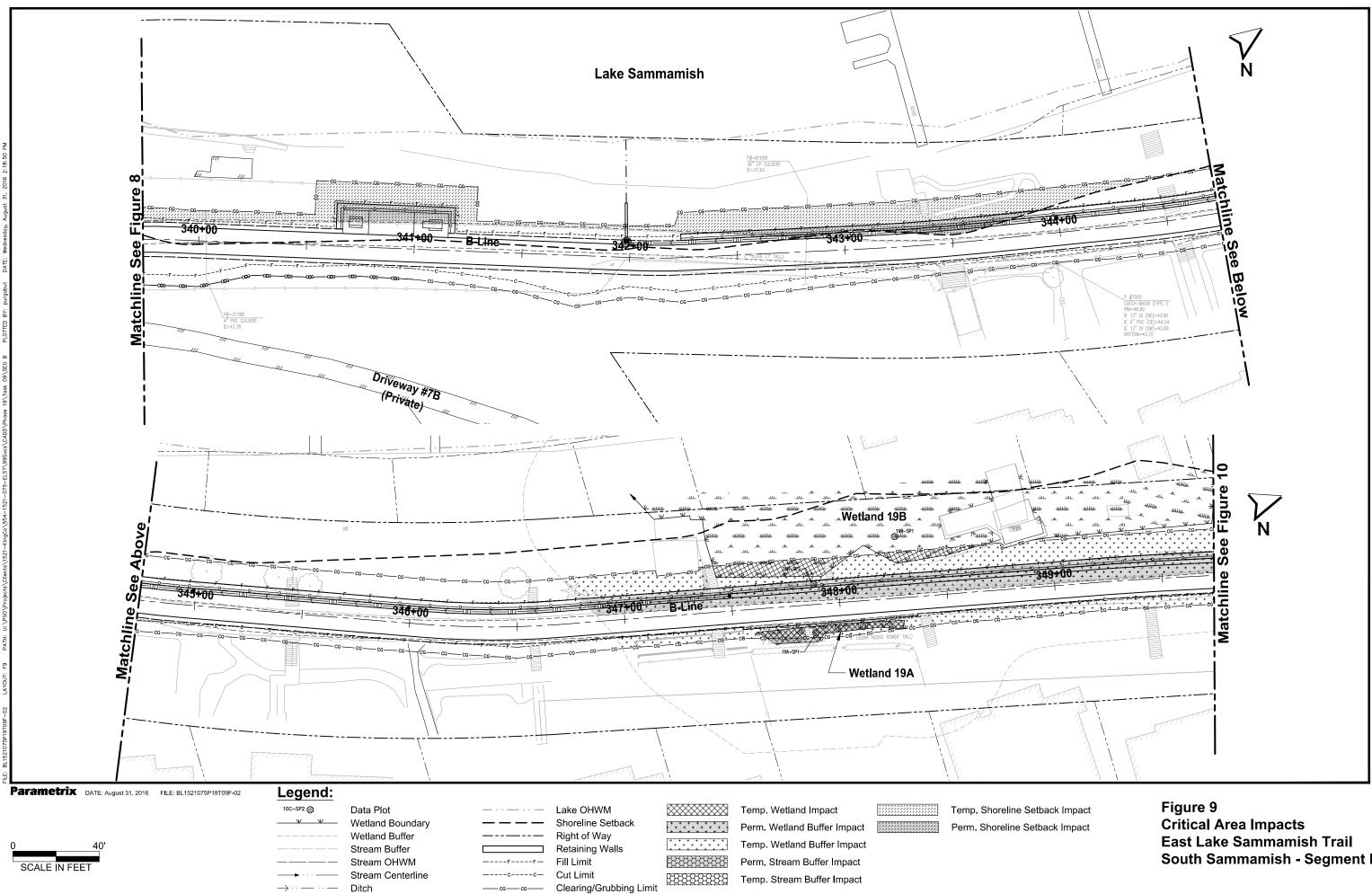


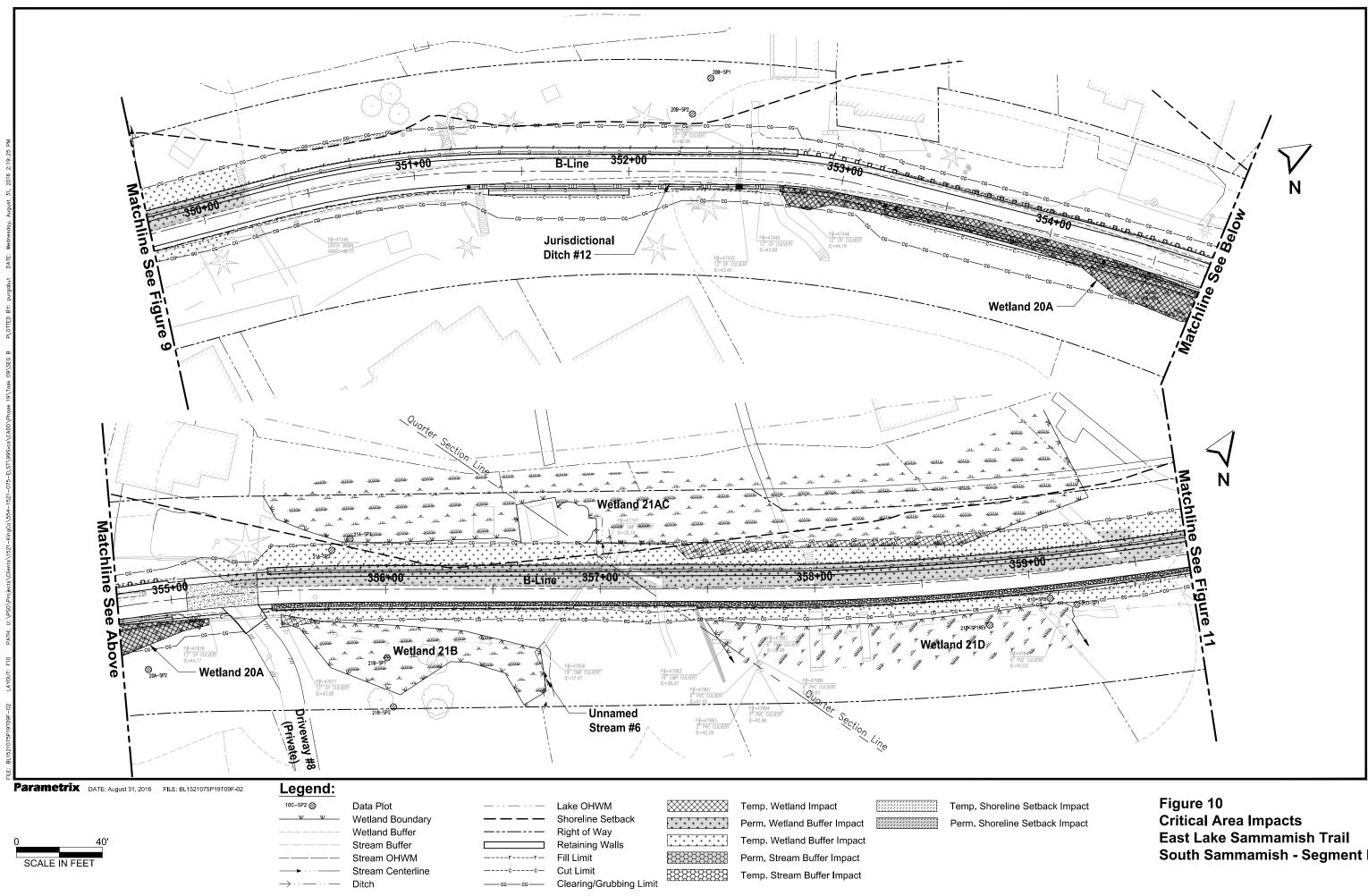
Clearing/Grubbing Limit

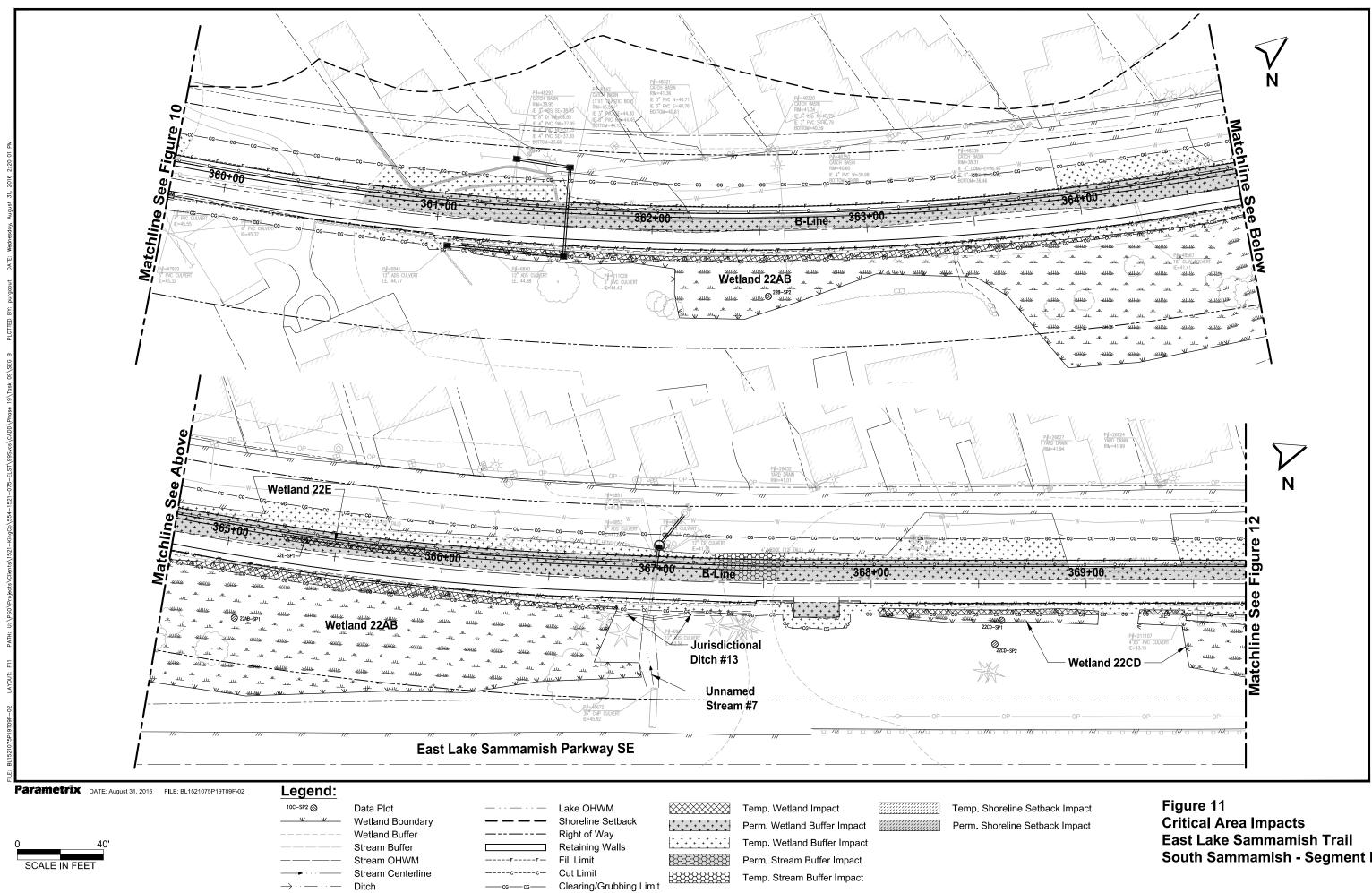
Ditch

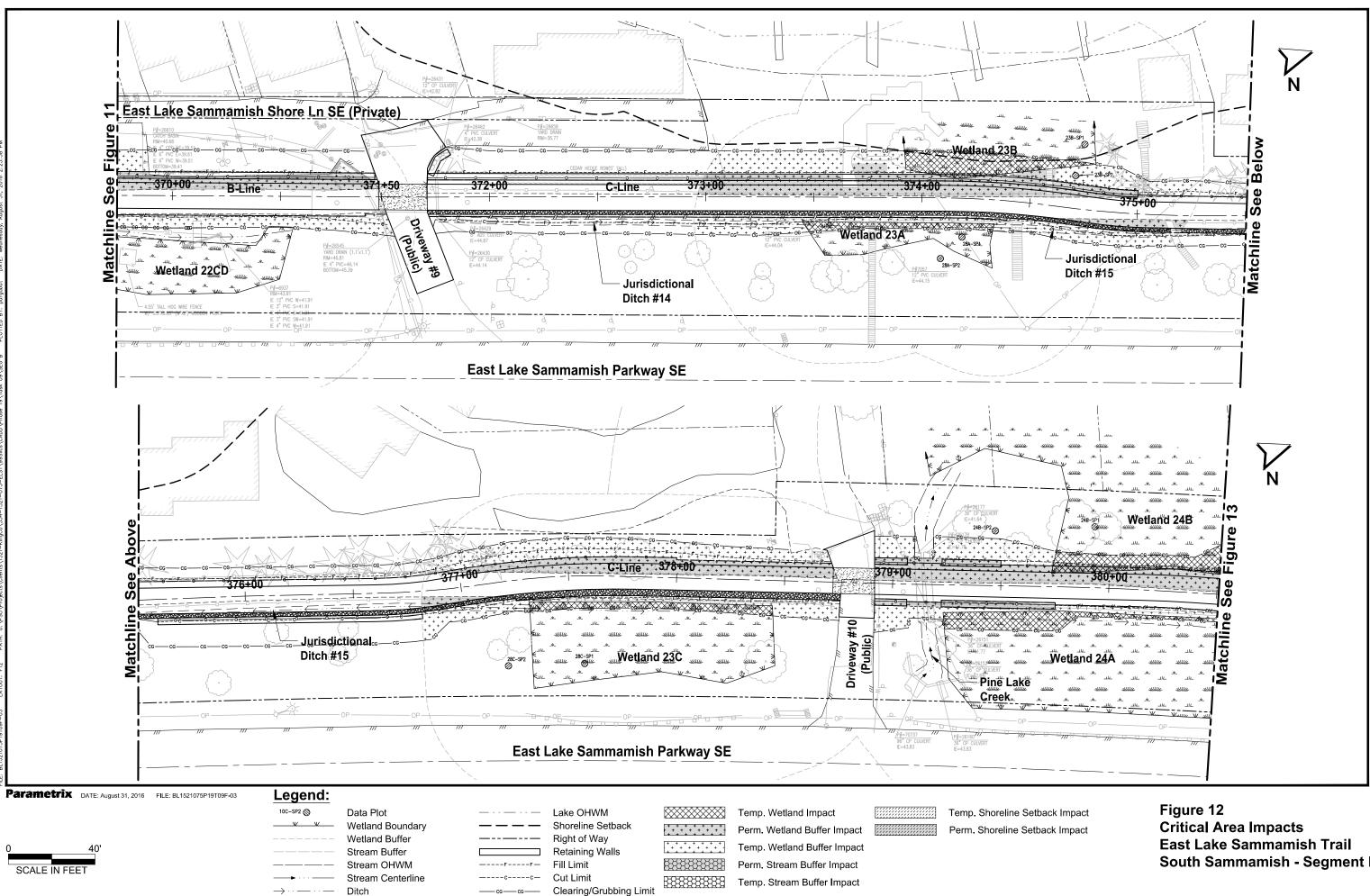
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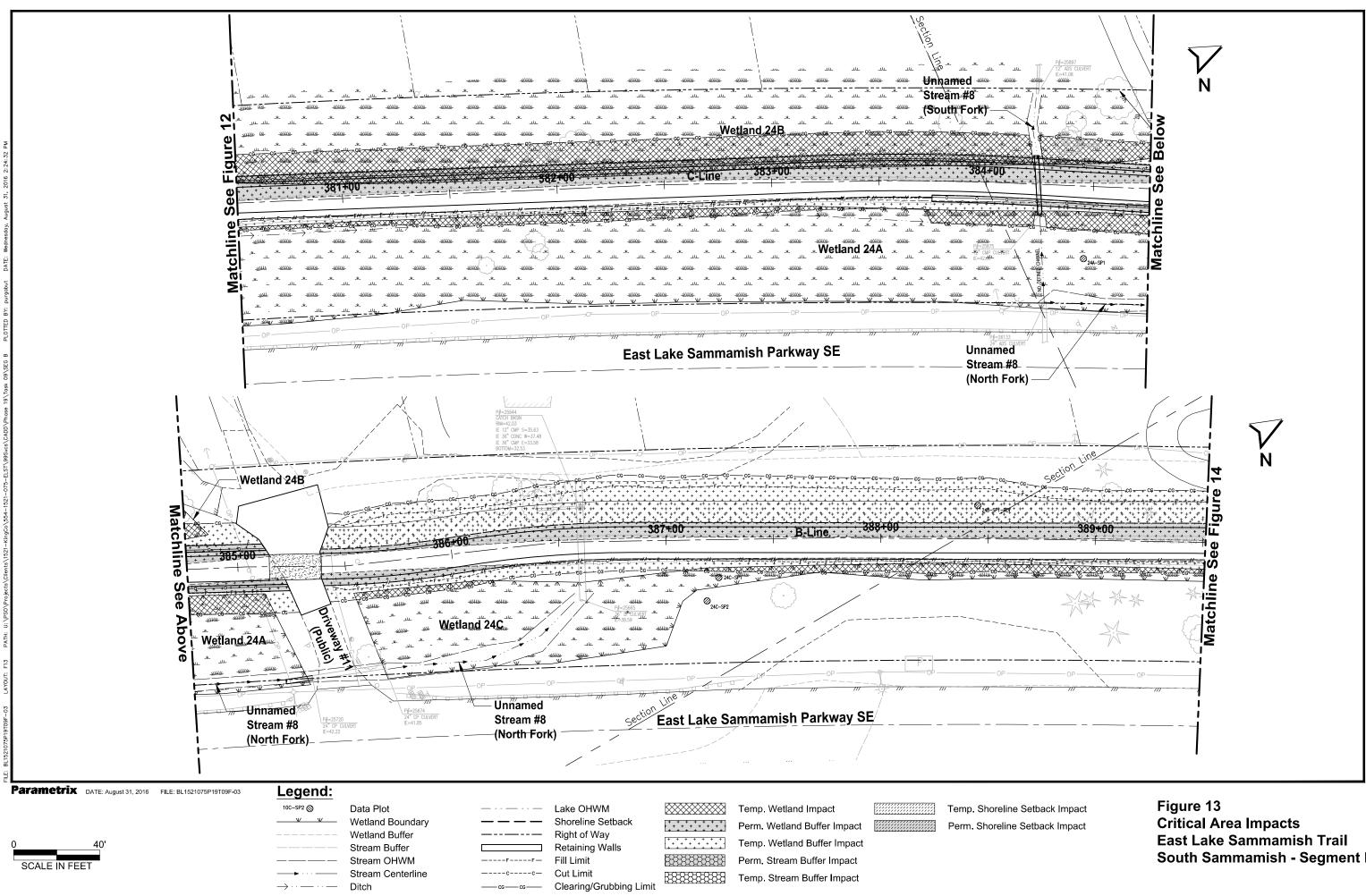
Temp. Stream Buffer Impact

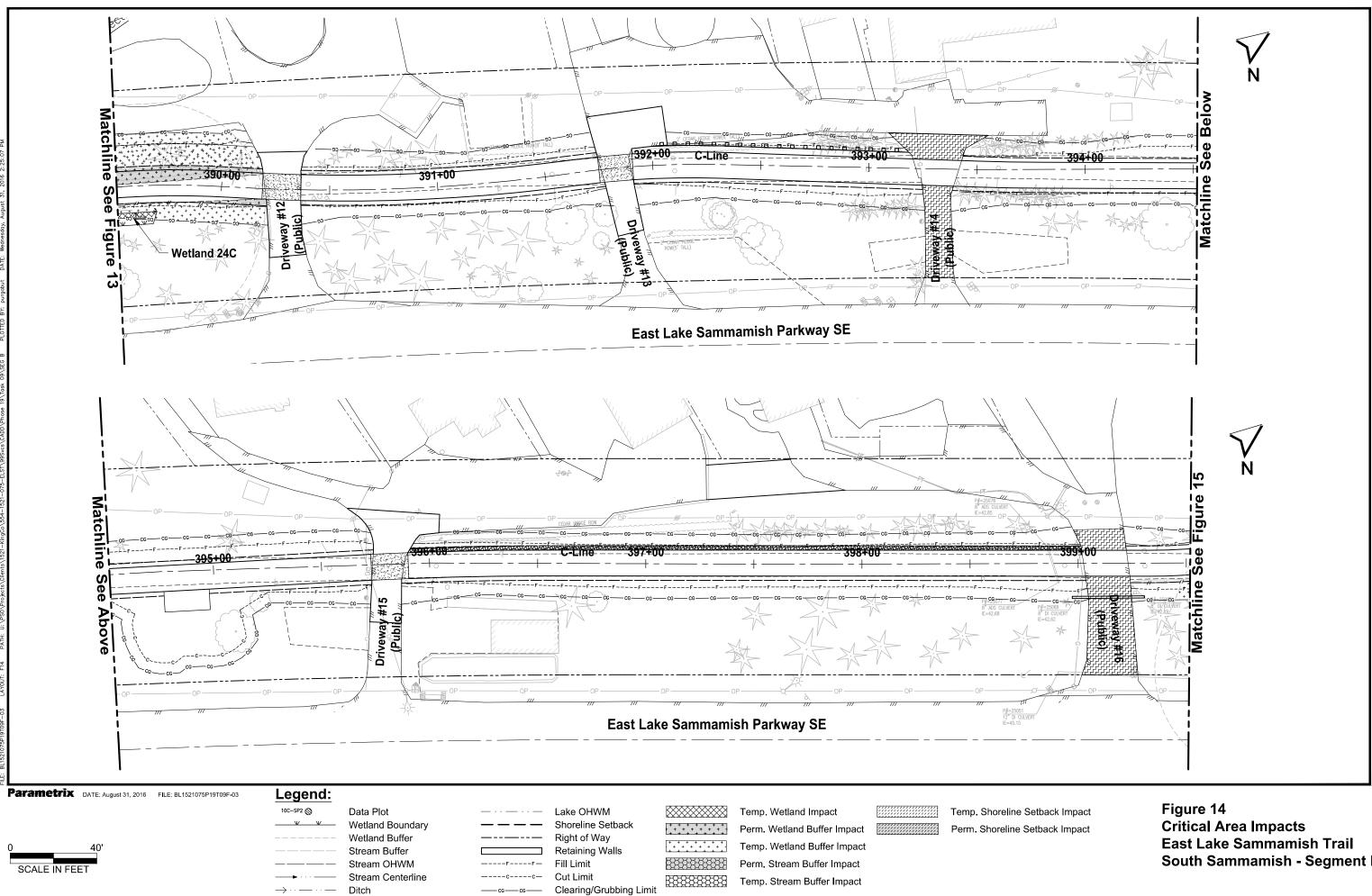


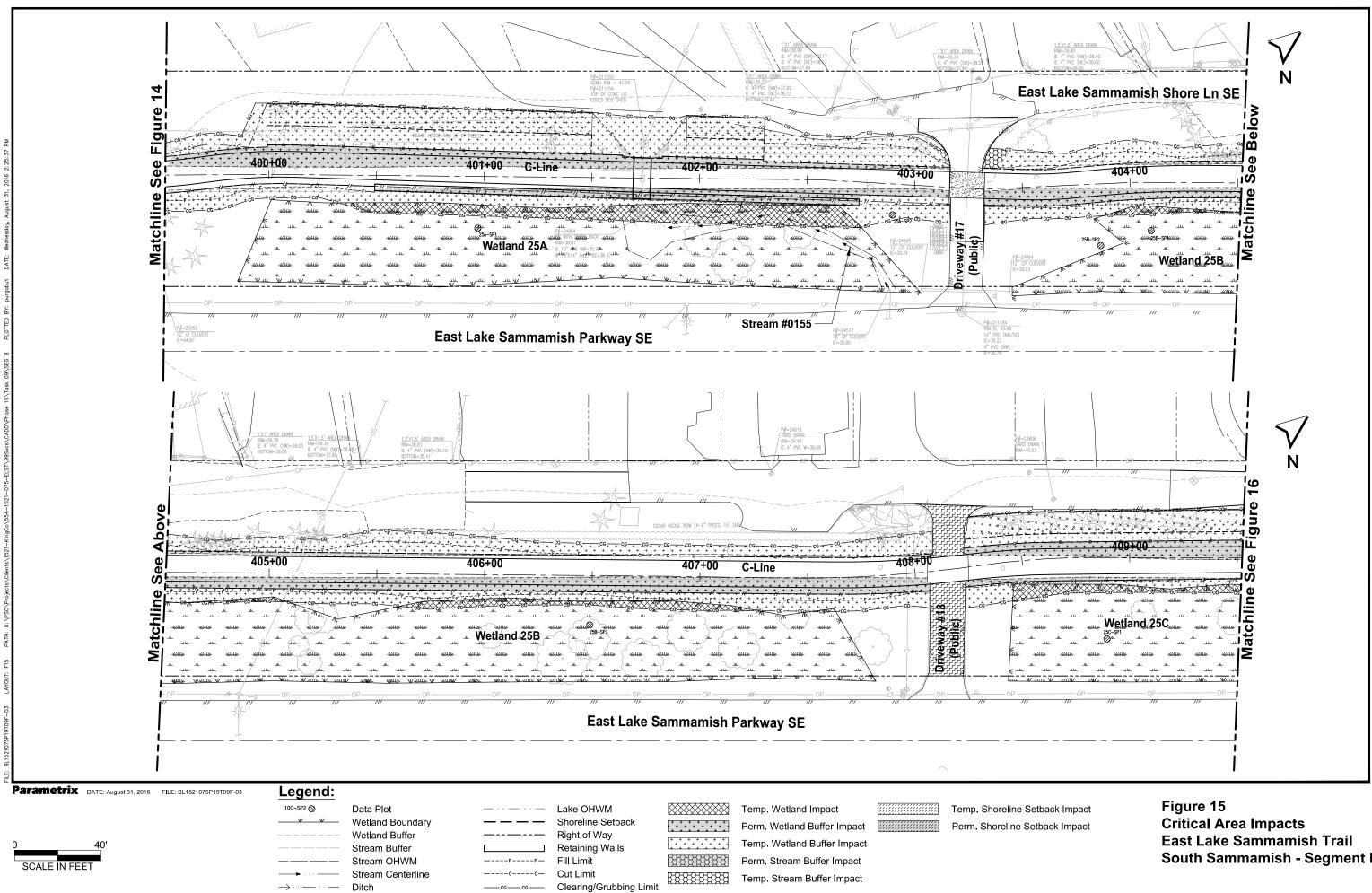


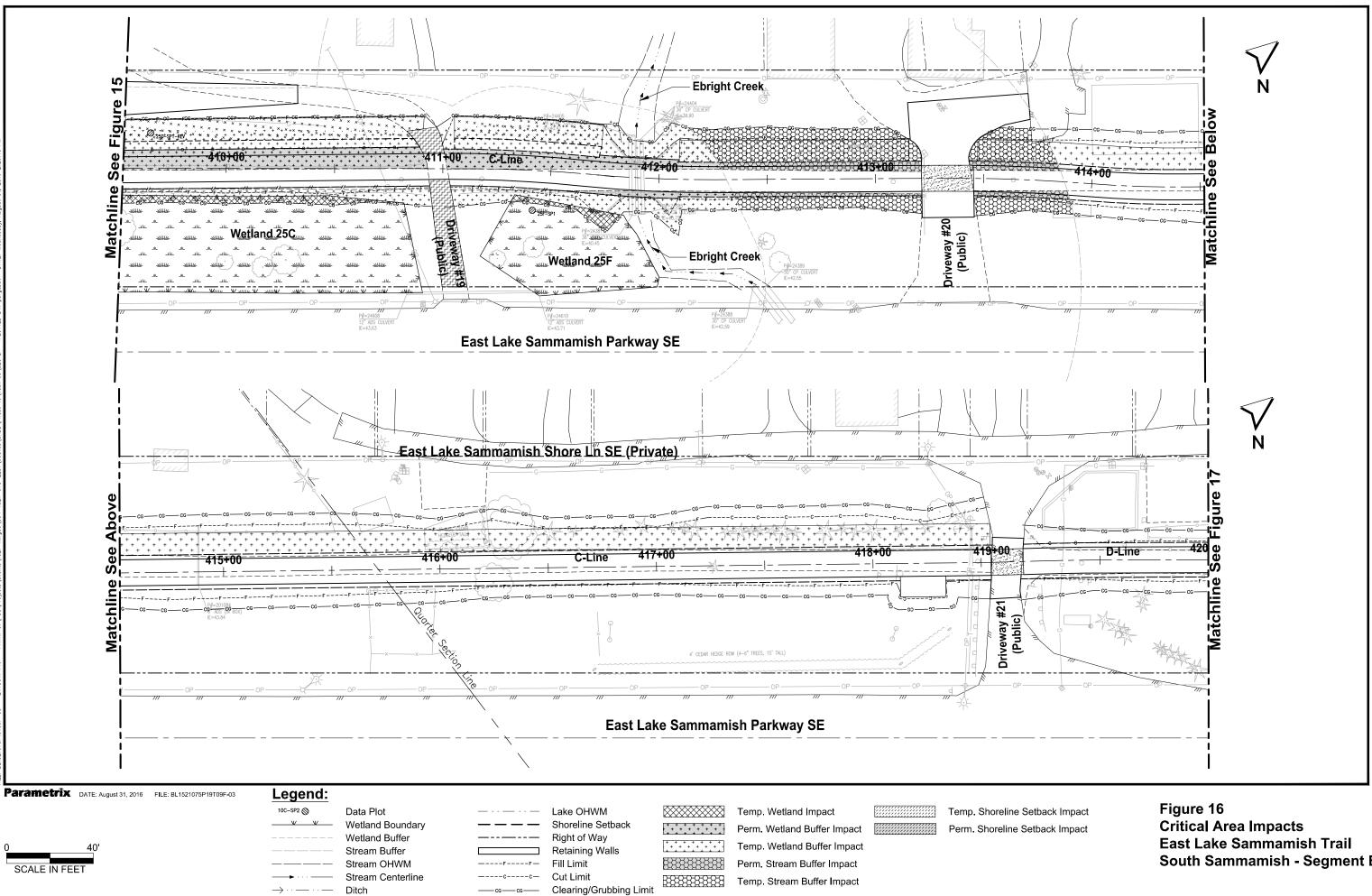


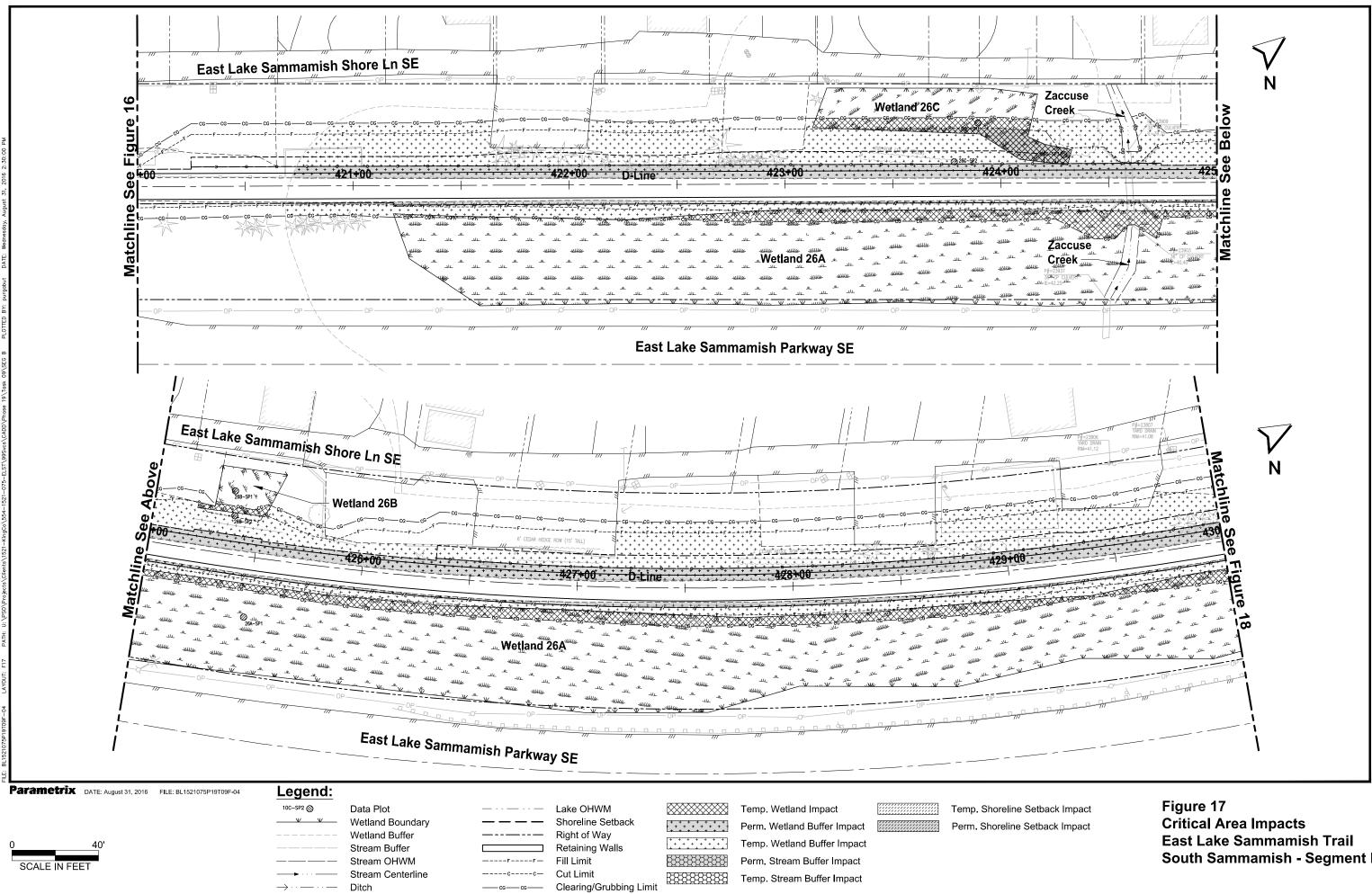


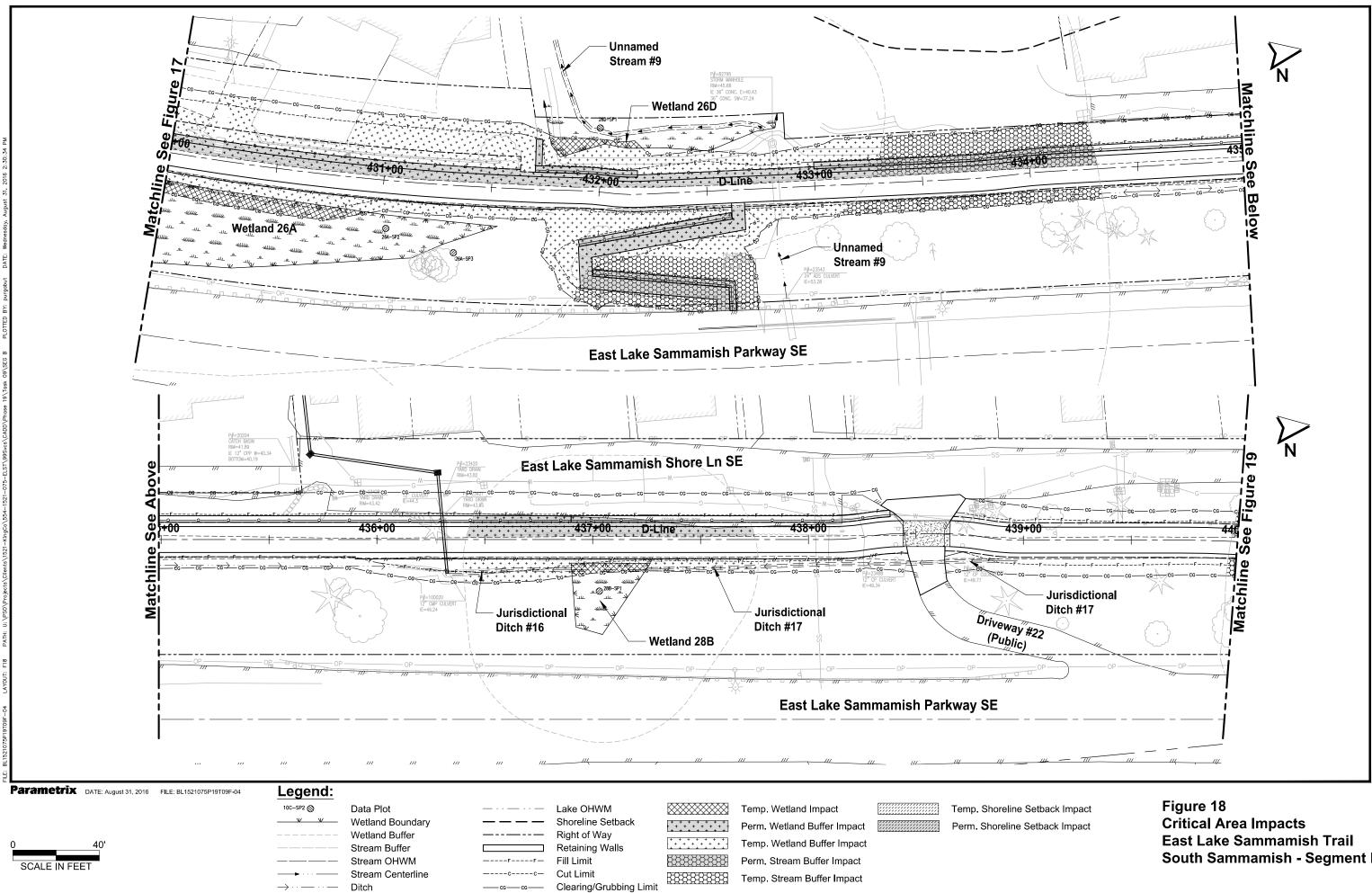


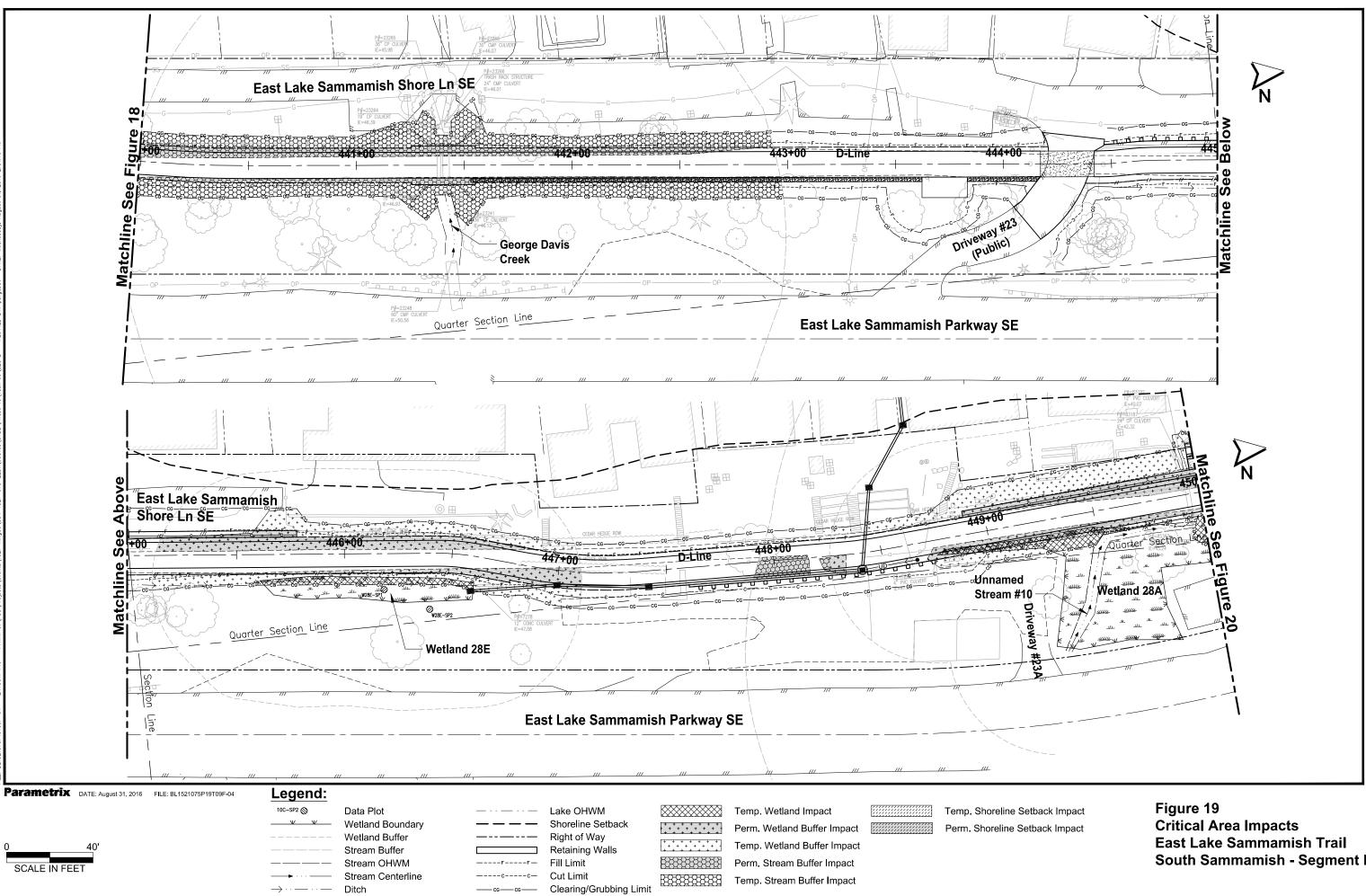


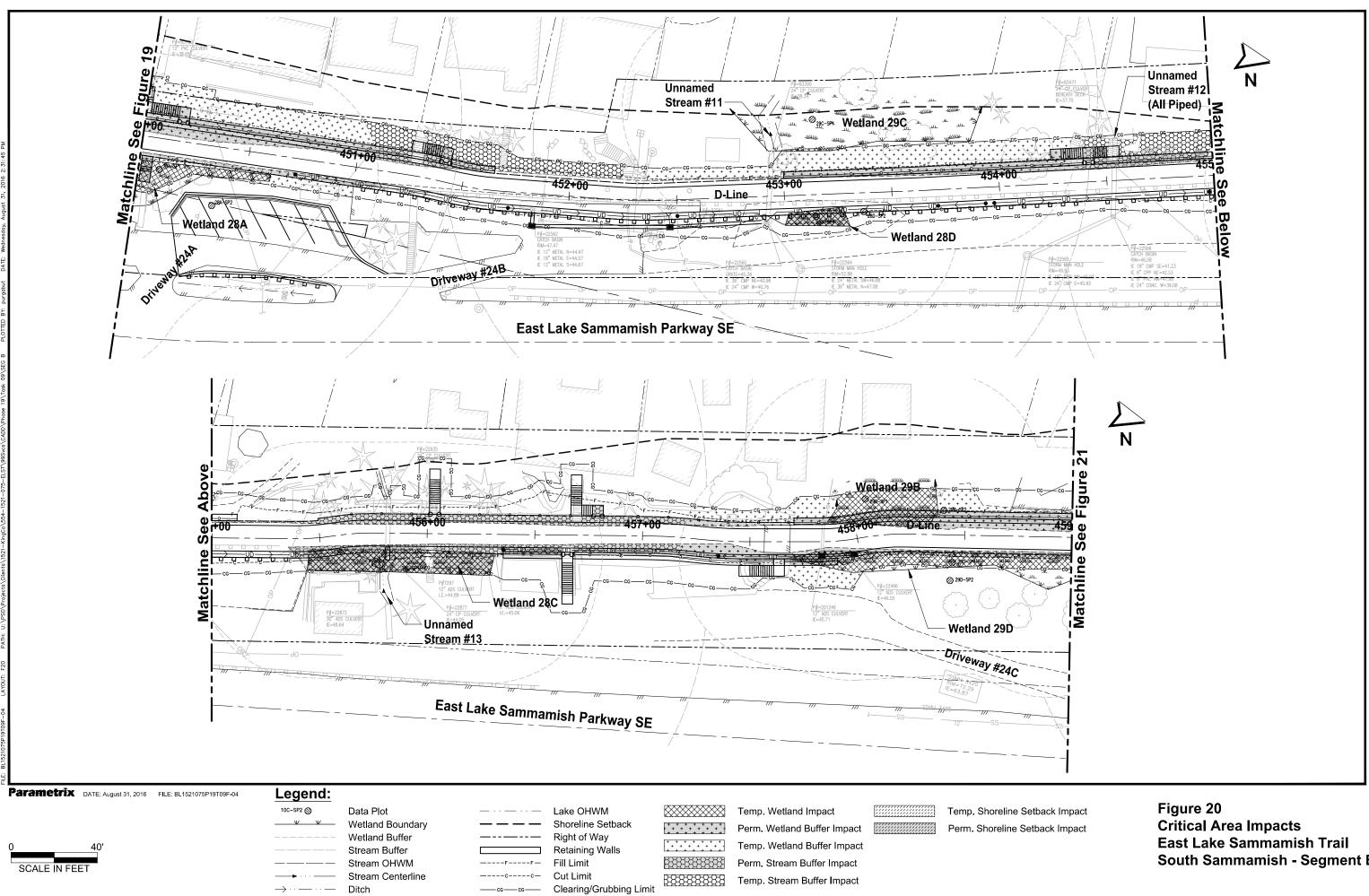


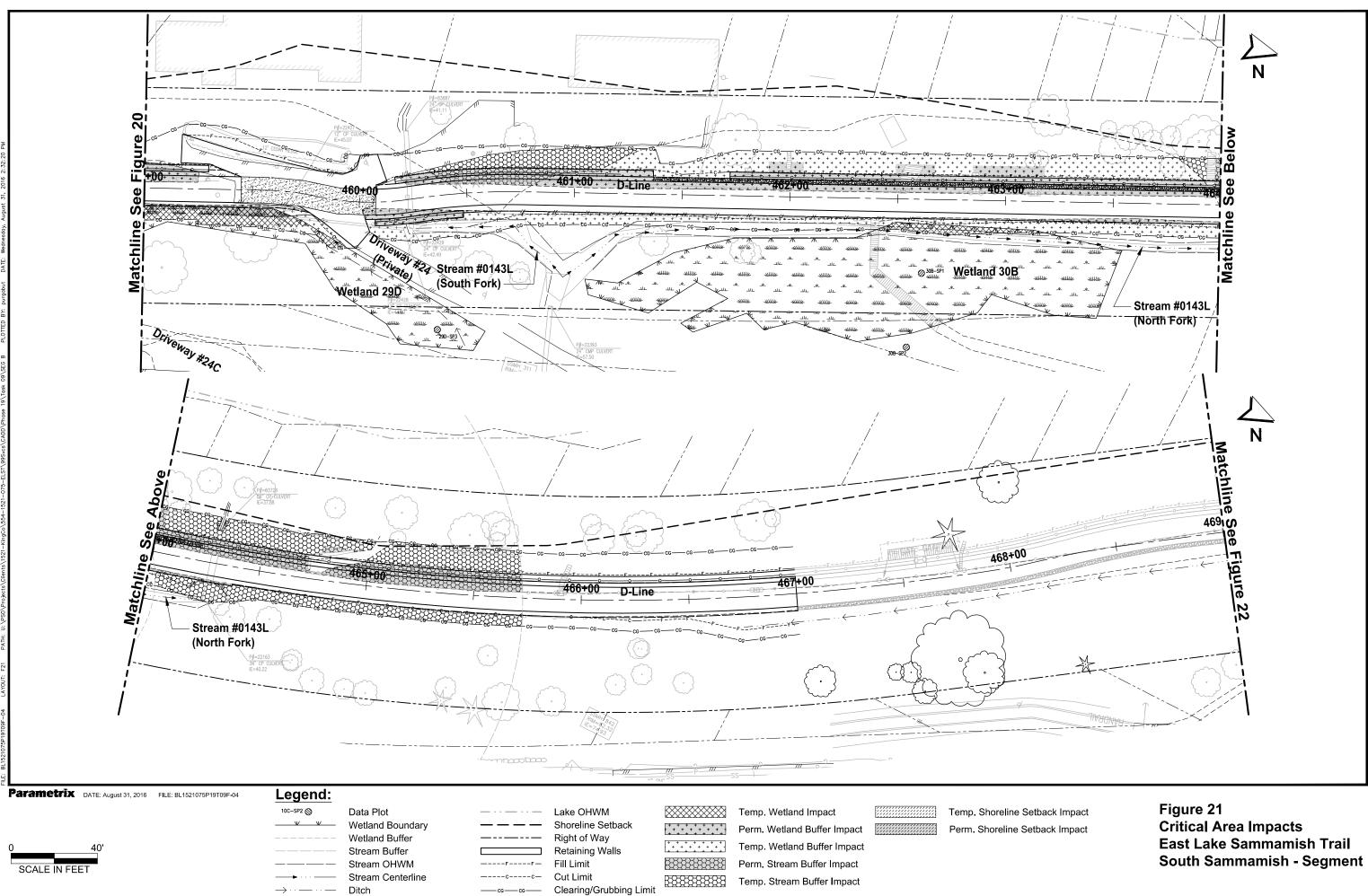


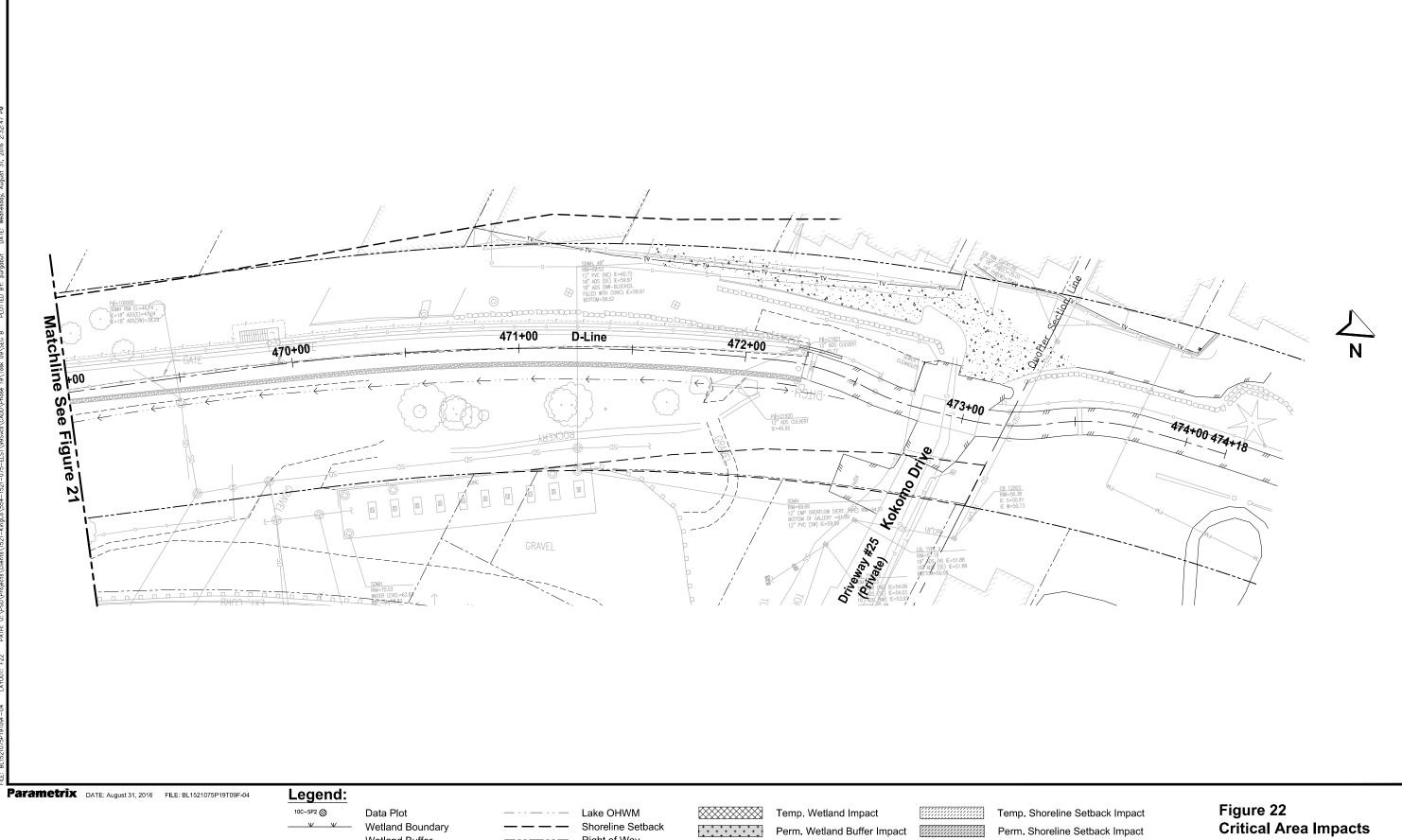




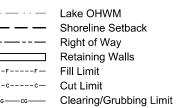








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remp, wettand impact
Perm. Wetland Buffer Impact
Temp. Wetland Buffer Impact
Perm. Stream Buffer Impact

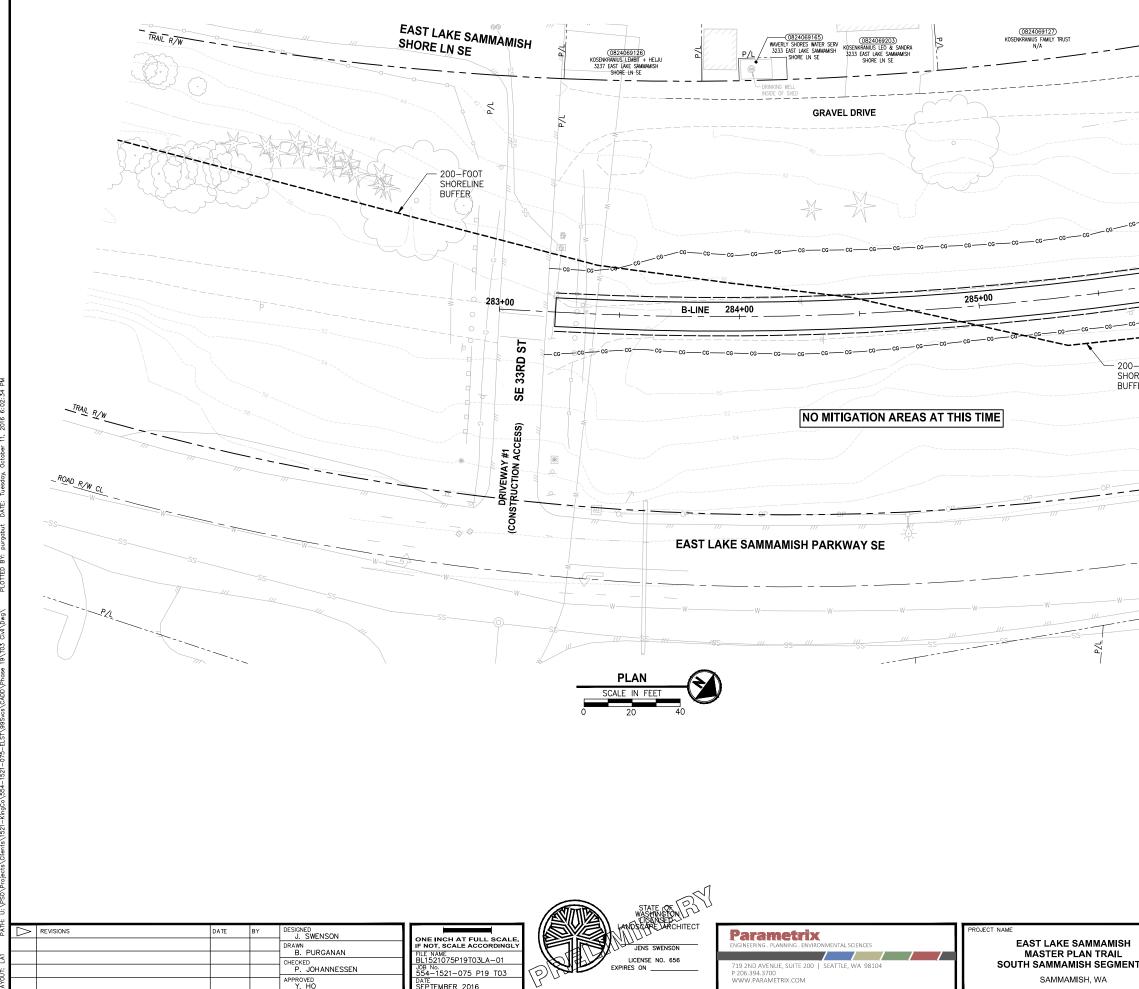
Temp. Stream Buffer Impact

Perm. Shoreline Setback Impact

**Critical Area Impacts** East Lake Sammamish Trail South Sammamish - Segment B

## APPENDIX E

Critical Areas Mitigation Landscape Plans



TEMBER 2016

SAMMAMISH, WA

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SHEET NO. 113 OF 135 LA1

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City Engineer	Date
Community Development	Date

CITY	OF	SAMMAMISH	APPROVAL



TRAIL R/W		1 REMOVE L
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	1	3 REMOVE O
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		5 PROTECT REMOVE E INVASIVE PLANT WI WOOD CH
40		6 PROTECT REMOVE E INVASIVE PLANT WIT WOOD CH
		GRADE AR AMEND SO WETLAND
286+00	ATCHLIN	GENERAL 1. SEE SHEET 2. SEEDING FOI THE MITIGATI
		LEGEND:
-FOOT 52 RELINE FER	ETLA	WBA           SSE           WC/WR
		+ <b>WE</b> + + +
	OP-TRAIL R/W	
	ROAD_R/W	<u>CL</u>
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### NOTE:

- LA23 FOR DETAILS AND PLANT LISTS.
- OR REMOVED DRIVEWAYS IS NOT PART OF ATION PLAN.

WETLAND BUFFER ENHANCEMENT 6

WETLAND BUFFER ADDITION AREA 6

WETLAND ENHANCEMENT AREA 5 STREAM BUFFER ENHANCEMENT AREA

SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

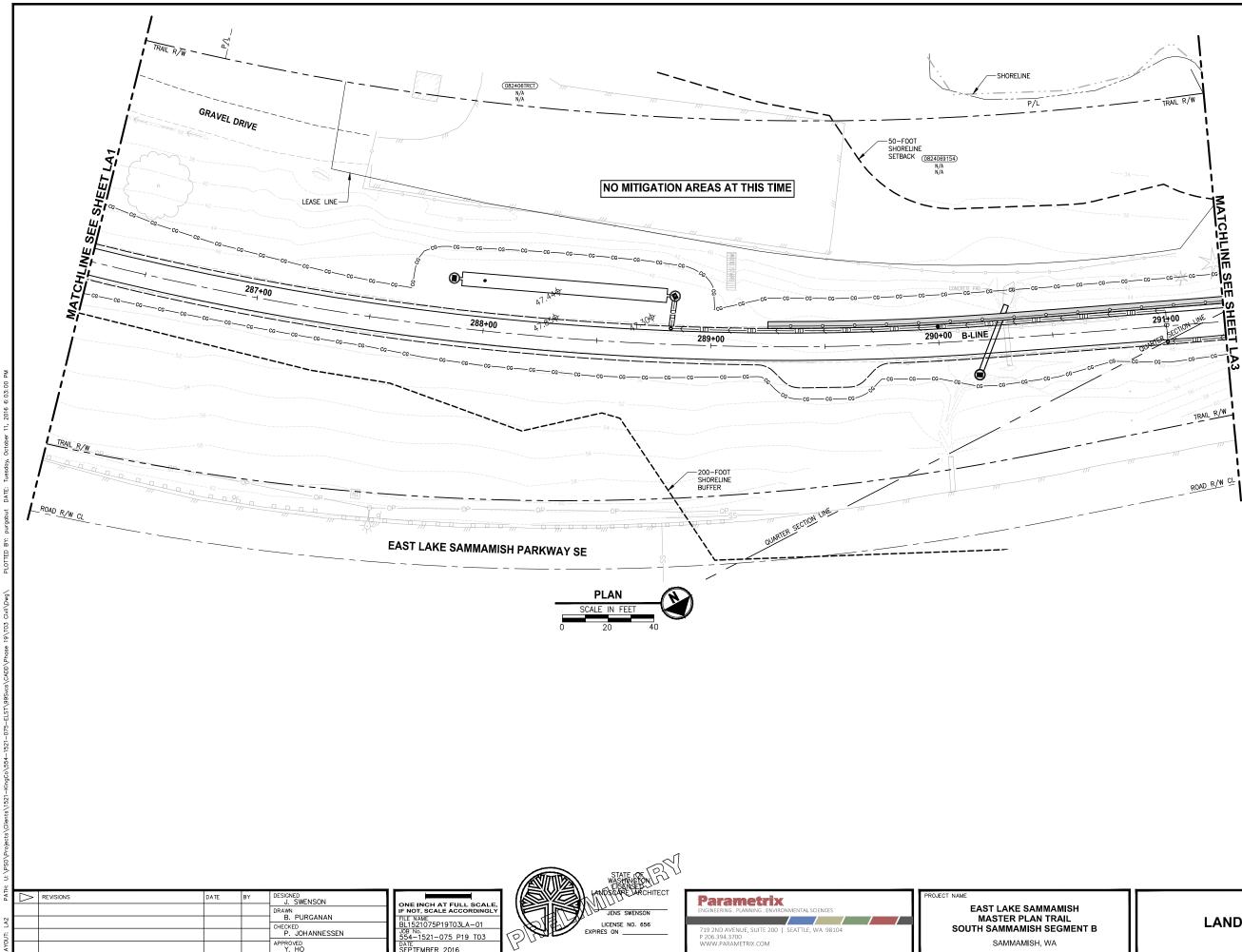
SHORELINE SETBACK 6 WETLAND CREATION OR RESTORATION AREA (7)

- THE MOLET OVER LITTLE AREAS AND SHRUBS; BLACKBERRY AND OTHER UNWANTED F PLANTS; AMEND SOLL WITH COMPOST; WITH NATIVE BUFFER PLANTS AND PLACE CHIP MULCH OVER ENTIRE AREA.
- AREA TO CREATE WETLAND CONDITIONS AND SOIL WITH COMPOST, PLANT WITH NATIVE D PLANTS.

#### **CONSTRUCTION NOTES:** $\sim$

- LAWN IN THIS AREA.
- CONCRETE PAD.
- GRAVEL PAVING.
- STRUCTURE IN THIS AREA.

FEXISTING NATIVE TREES AND SHRUBS; BLACKBERRY AND OTHER UNWANTED PLANTS; AMEND SOIL WITH COMPOST; WITH NATIVE WETLAND PLANTS AND PLACE SHIP MULCH OVER ENTIRE AREA.



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SHEET NO. 114 OF 135

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Community Development	Date

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City Engineer	Date
Community Development	Date

CITY	OF	SAMMAMISH	APPROVAL

CITA OF	SAMMAMISH	APPROVAL
City Engineer		Date

### GENERAL NOTE:

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

WETLAND BUFFER ENHANCEMENT 6

WETLAND BUFFER ADDITION AREA 6

SHORELINE SETBACK 6

WETLAND CREATION OR RESTORATION AREA (7)

WETLAND ENHANCEMENT AREA 5

STREAM BUFFER ENHANCEMENT AREA SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

LEGEND:

WBA

SSE

WC/WR

+ **WE** + + +

**SBE** 

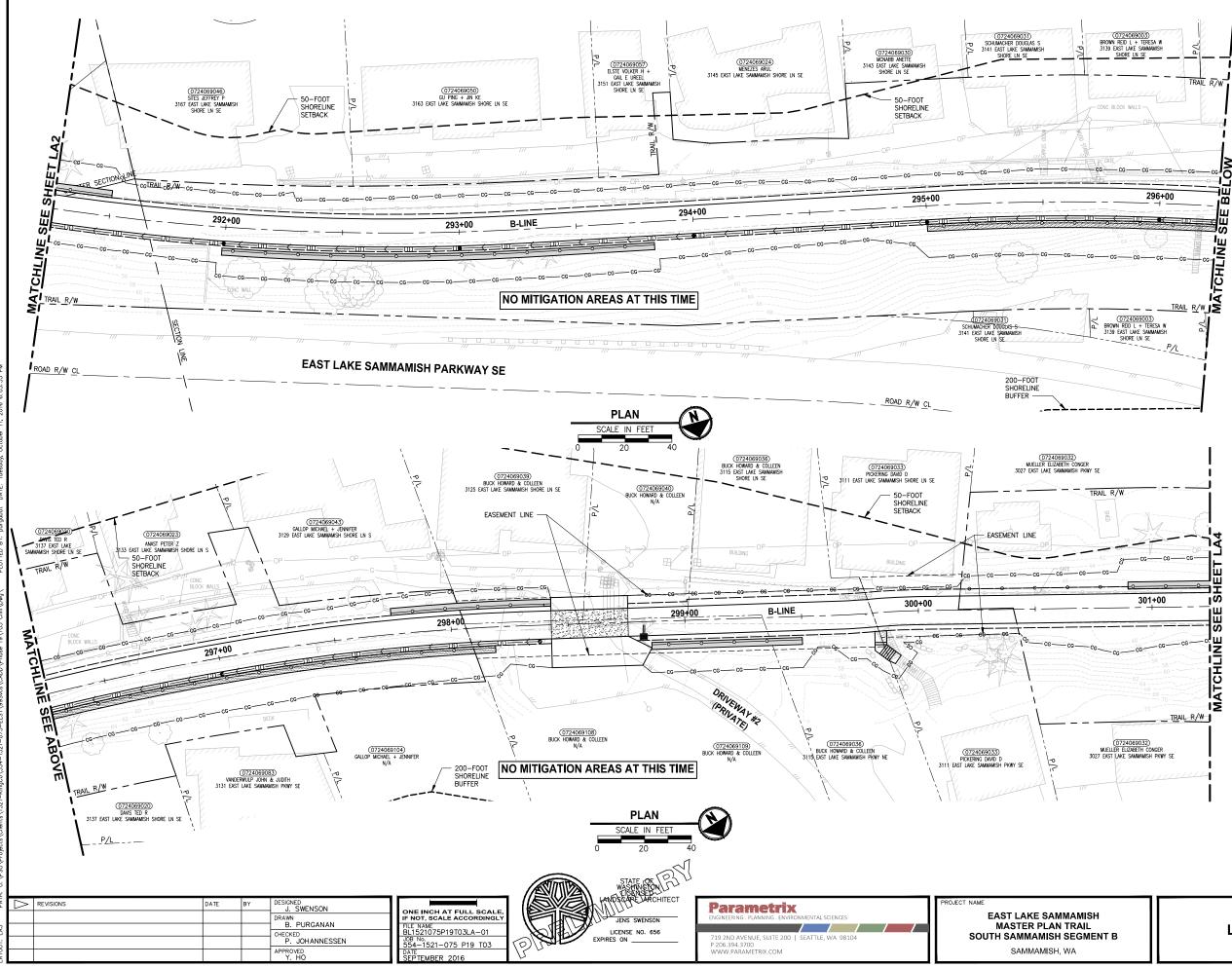
WBE /

4 REMOVE STRUCTURE IN THIS AREA. 5 PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.  $(\mathbf{6})$ GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

CONSTRUCTION NOTES: (1) REMOVE LAWN IN THIS AREA.

2 REMOVE CONCRETE PAD.

3 REMOVE GRAVEL PAVING.



SHEET NO. 115 OF 135



CITY OF SAMMAMISH APPROVAL

City Engine

Community Development



Date

Date



### CONSTRUCTION NOTES:

- (1) REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; (5) PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

- PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

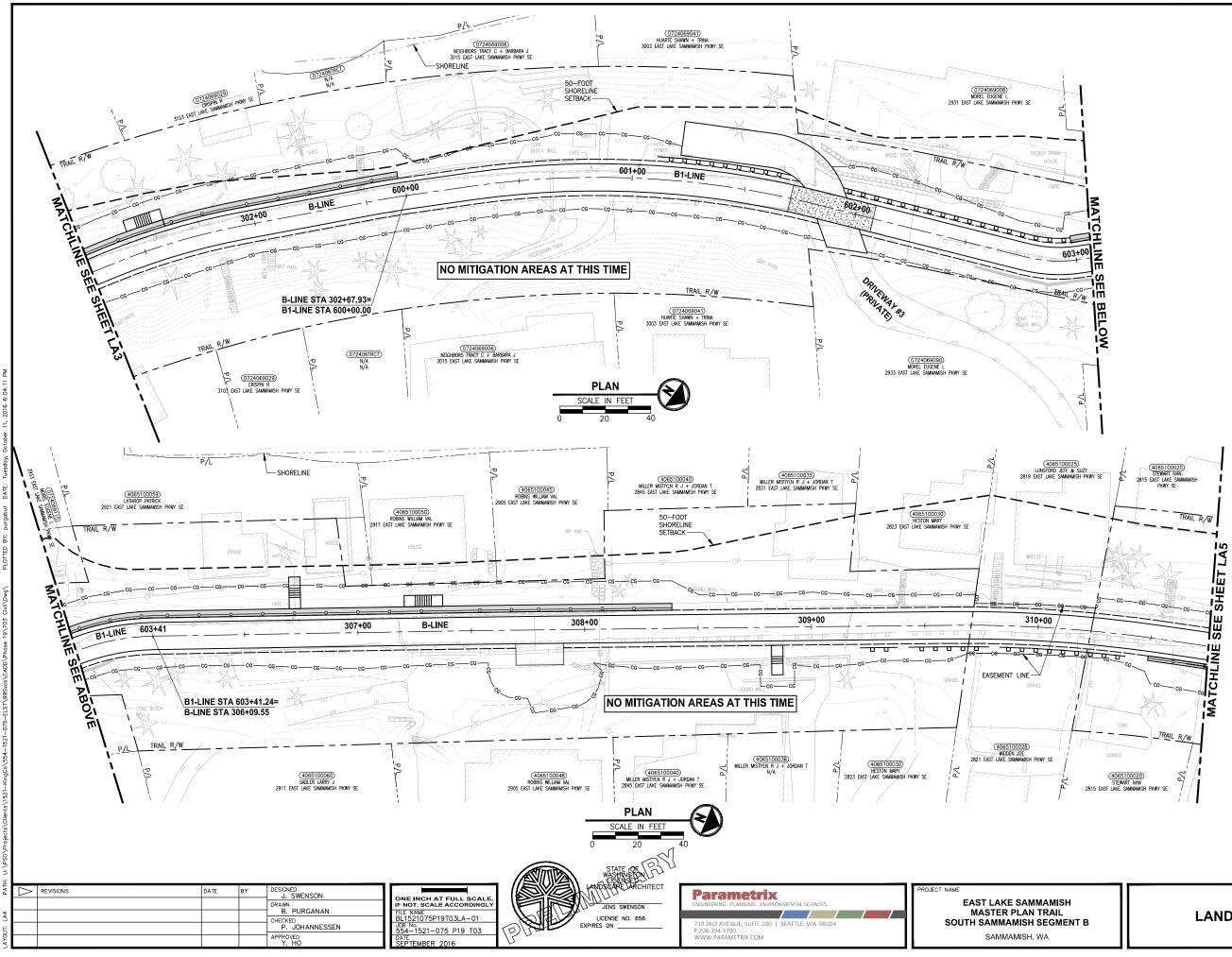
#### GENERAL NOTE:

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

WBE	wetland buffer enhancement $6$
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ <b>WE</b> + + +	WETLAND ENHANCEMENT AREA
SBE SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.





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- (1) REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; 5 PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

- ROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

#### GENERAL NOTE:

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

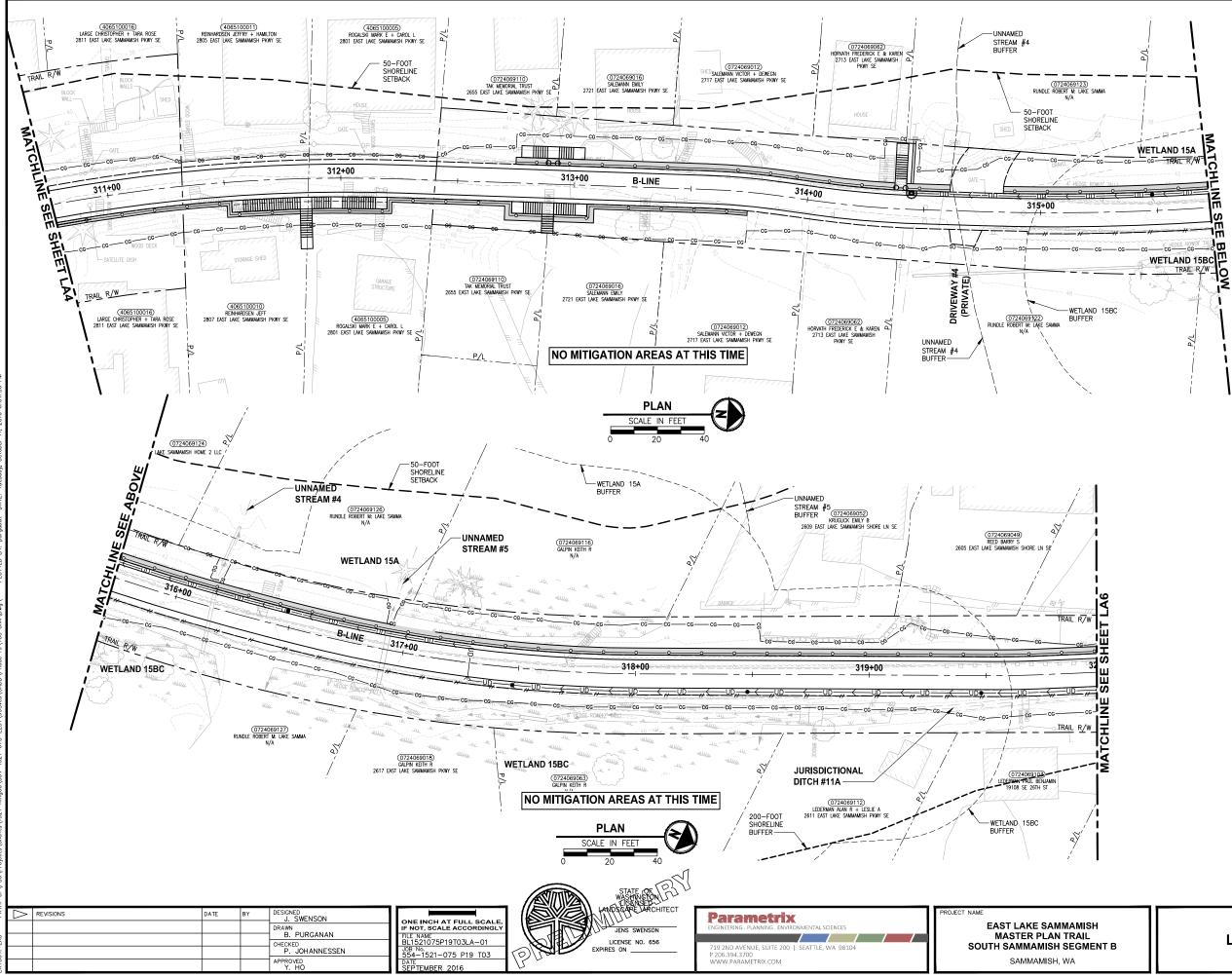
#### LEGEND:

WBE	WETLAND BUFFER ENHANCEMENT 6
WBA	wetland buffer addition area 6
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA 5
SBE SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

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CITY	OF	SAMMAMISH	APPROVAL

#### GENERAL NOTE:

WETLAND PLANTS.

CONSTRUCTION NOTES:

1 REMOVE LAWN IN THIS AREA.

2 REMOVE CONCRETE PAD.

3 REMOVE GRAVEL PAVING.

5

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4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST;

PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

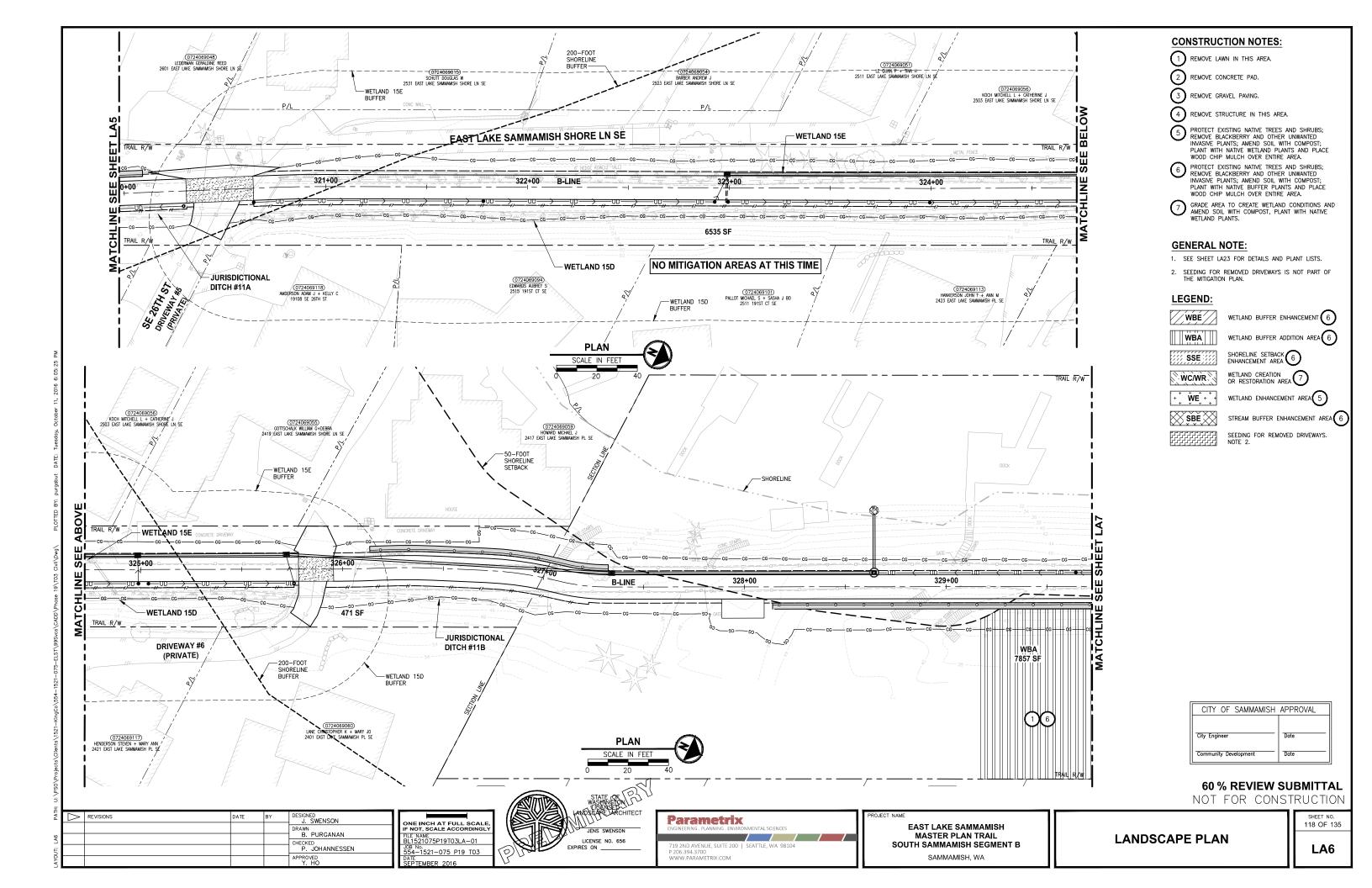
PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

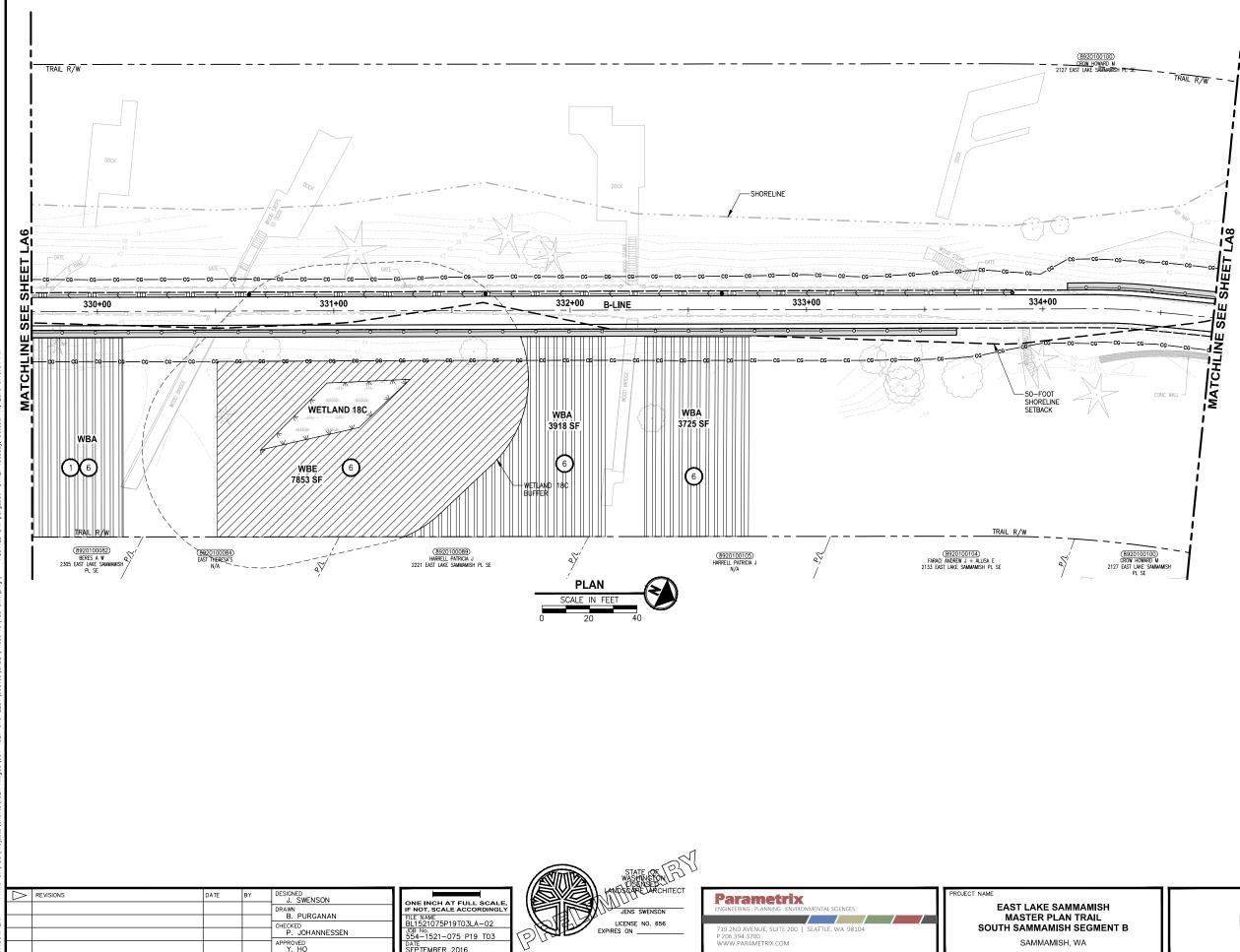
GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

LEOLIND.	
WBE	wetland buffer enhancement $6$
WBA	WETLAND BUFFER ADDITION AREA 6
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA 7
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA 5
<b>SBE</b>	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.





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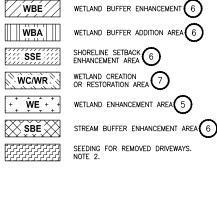
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GENERAL NOTE:

## 2 REMOVE CONCRETE PAD.

CONSTRUCTION NOTES:

- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

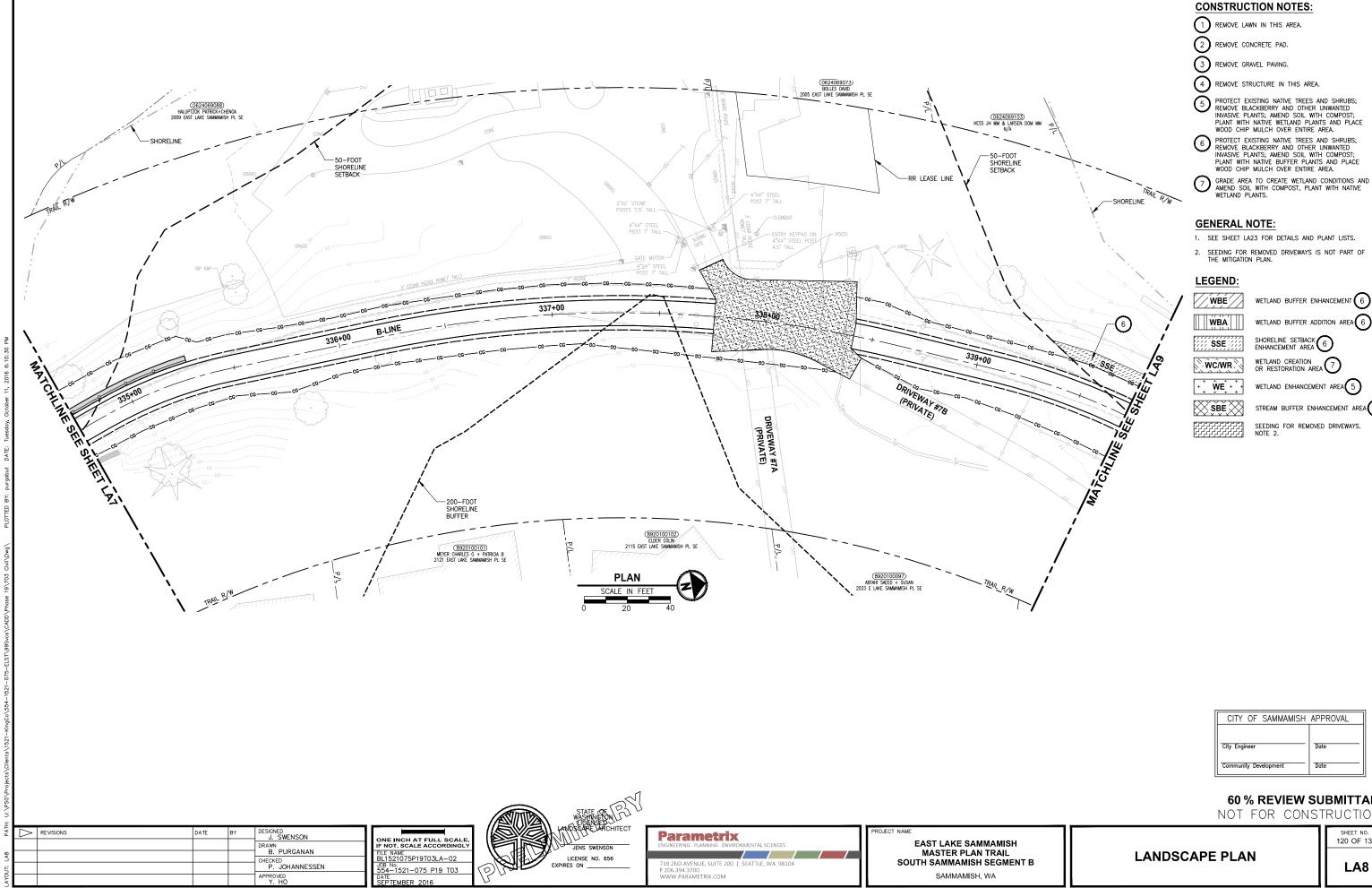
5 PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

- FORDECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.

2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

## (1) REMOVE LAWN IN THIS AREA.



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SHEET NO. 120 OF 135

City Engineer	Date
Community Development	Date

#### CITY OF SAMMAMISH APPROVAL



#### GENERAL NOTE:

WETLAND PLANTS.

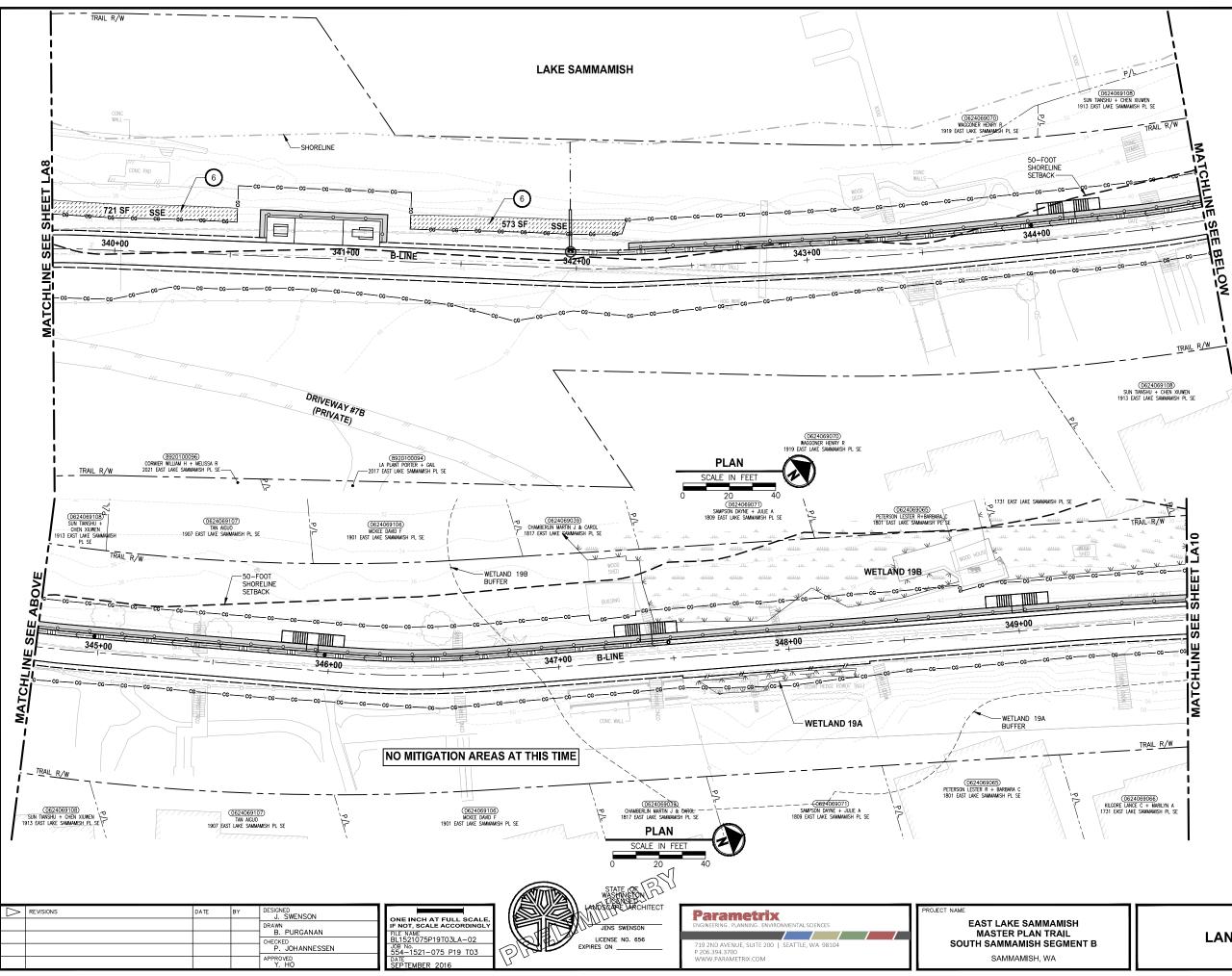
- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

### <u>LEG</u>END

LEGEND:	
WBE	wetland buffer enhancement $6$
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + + <b>WE</b> + + + +	WETLAND ENHANCEMENT AREA 5
SBE SBE	STREAM BUFFER ENHANCEMENT AREA 6
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.



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CITY OF SAMMAMISH	APPROVAL
City Engineer	Date
Community Development	Date
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#### LEGEND: WBE ( WETLAND BUFFER ENHANCEMENT 6 WETLAND BUFFER ADDITION AREA WBA SHORELINE SETBACK 6 SSE 🥬 WETLAND CREATION OR RESTORATION AREA WC/WR WETLAND ENHANCEMENT AREA 5 WE + **SBE** STREAM BUFFER ENHANCEMENT AREA SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS. GENERAL NOTE:
- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

5

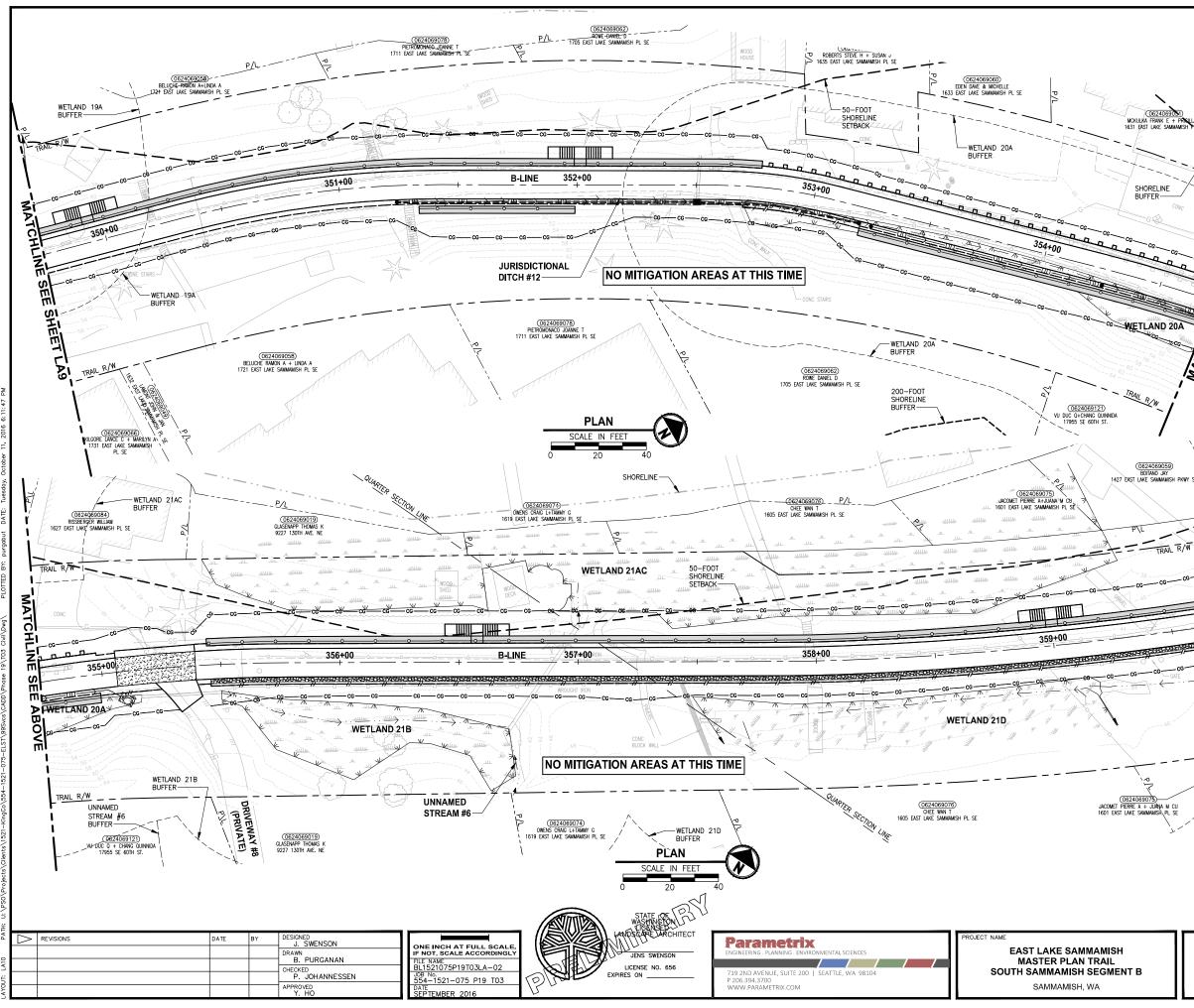
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- (1) REMOVE LAWN IN THIS AREA. 2 REMOVE CONCRETE PAD.
- 4 REMOVE STRUCTURE IN THIS AREA.

3 REMOVE GRAVEL PAVING.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.



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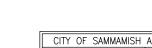
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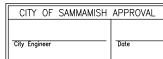


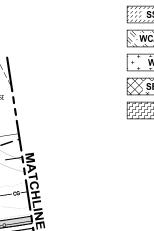






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WBE	wetland buffer enhancement $6$
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA 5
<b>SBE</b>	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

### LEGEND:

GENERAL NOTE:

(3)	REMOVE GRAVEL PAVING.
(4)	REMOVE STRUCTURE IN THIS AREA.
5	PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
6	PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED

- REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

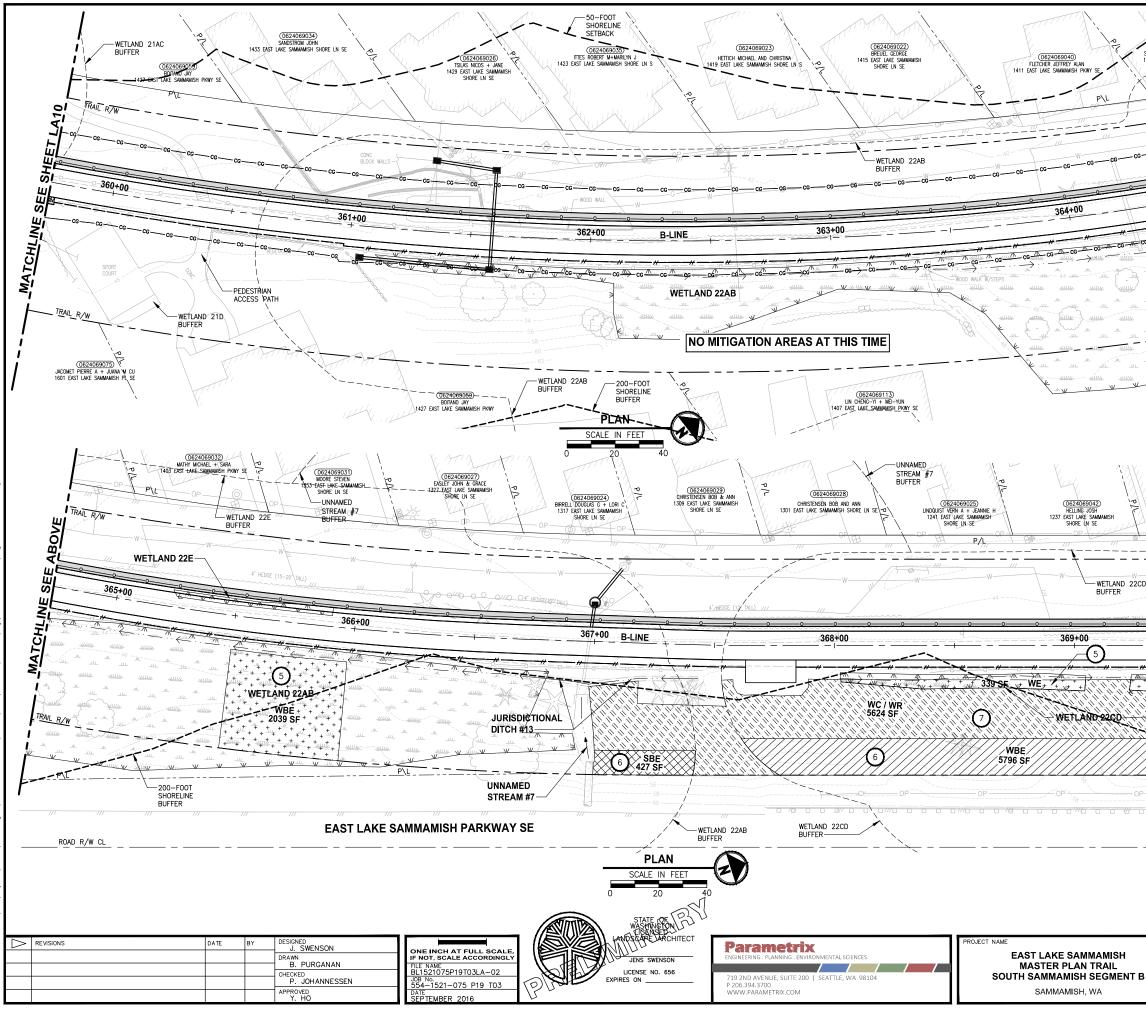
1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.

2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

### CONSTRUCTION NOTES:

1 REMOVE LAWN IN THIS AREA.

2 REMOVE CONCRETE PAD.



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#### CONSTRUCTION NOTES:

- 1 REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (5)

- PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (6)
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

#### GENERAL NOTE:

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

WBE	wetland buffer enhancement $6$
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA 5
SBE SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

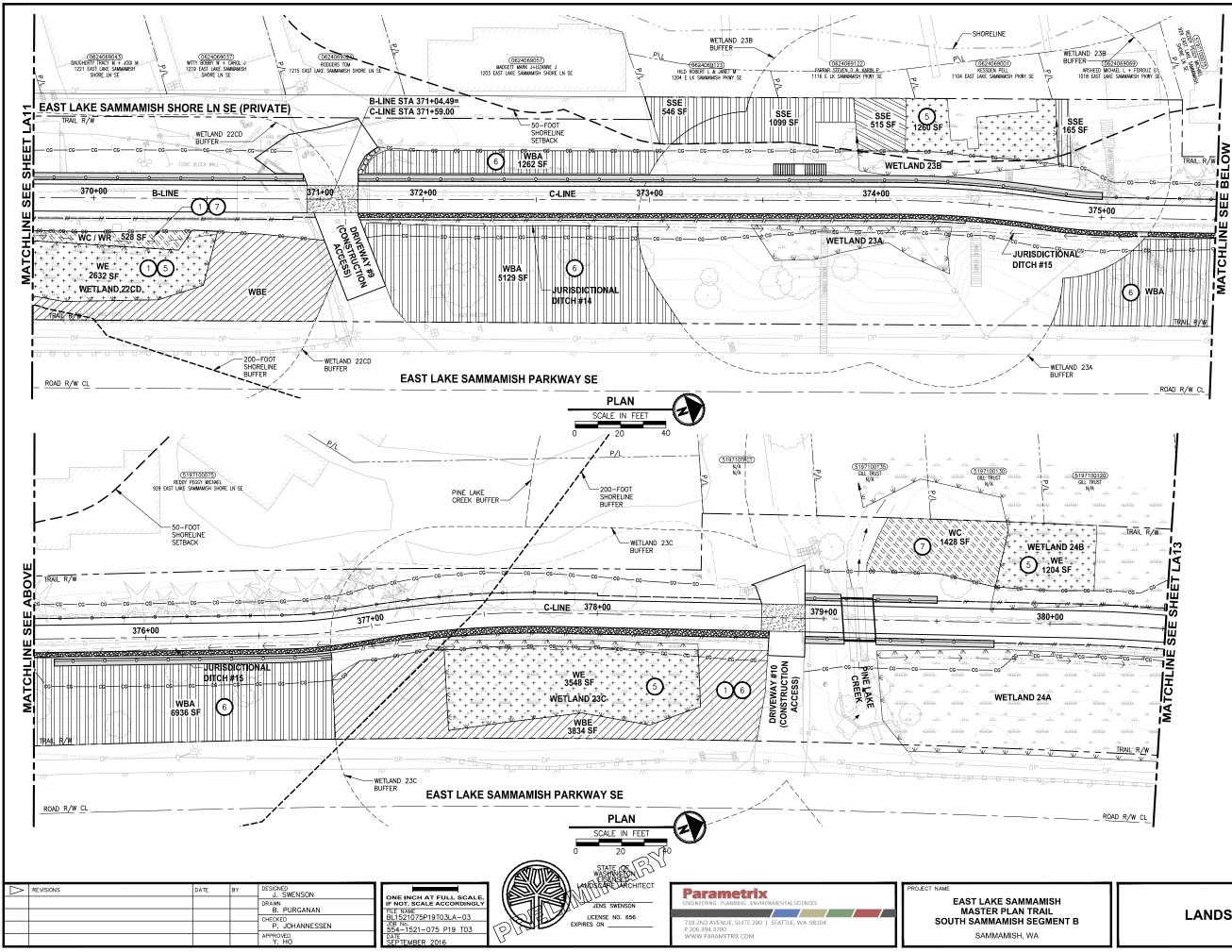
CITY OF SAMMAMISH	APPROVAL
City Engineer	Date
Community Development	Date

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SHEET NO. 123 OF 135

LANDSCAPE PLAN





- 1 REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; (5) PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

- PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE (7) WETLAND PLANTS.

#### **GENERAL NOTE:**

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

WBE	wetland buffer enhancement $6$
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA 5
SBE SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

CITY OF SAMMAMISH	
City Engineer	Date
Community Development	Date

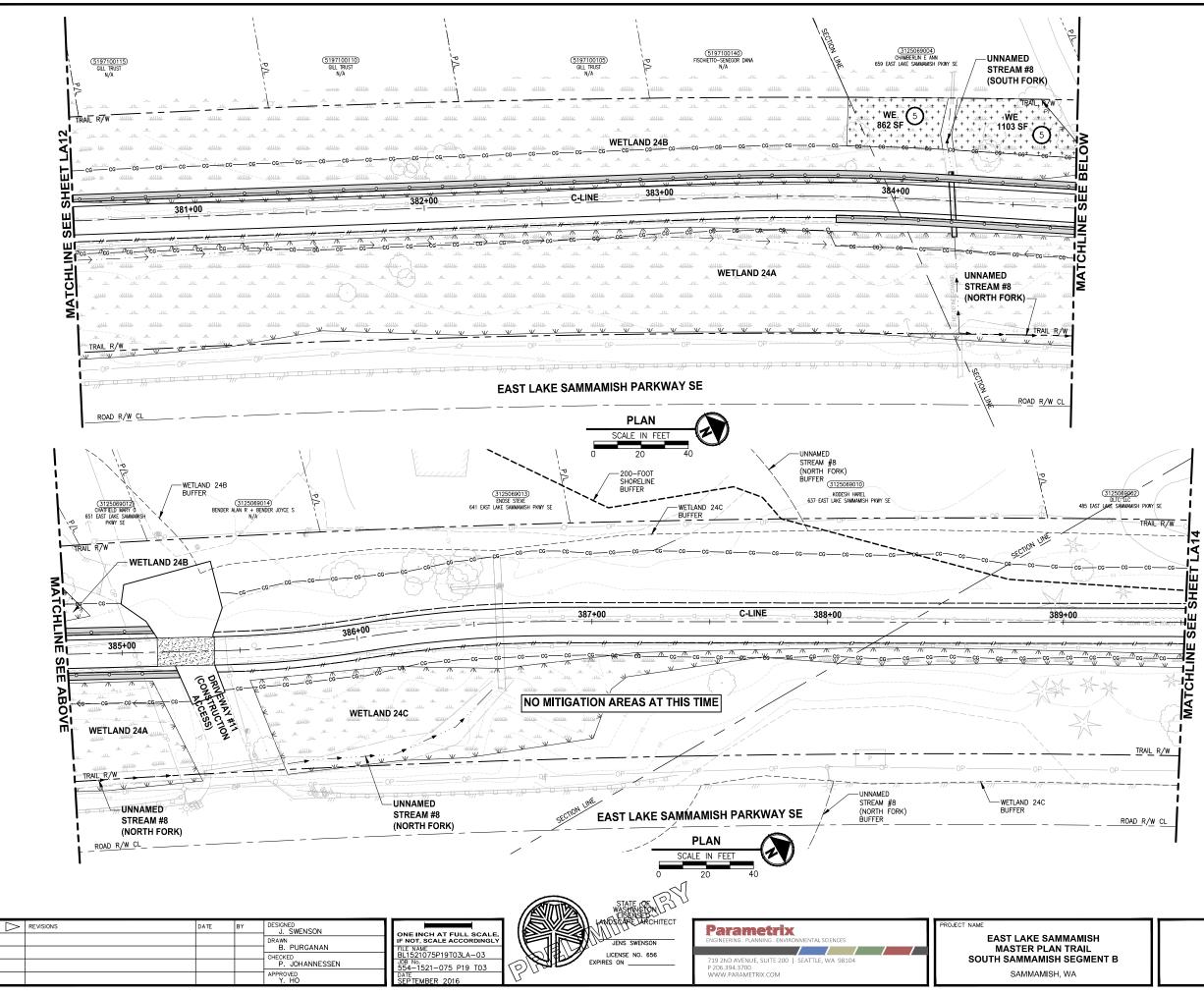
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SHEET NO. 124 OF 135

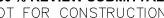
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LANDSCAPE PLAN



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EGEND:	
/ WBE //	WETLAND BUFFER ENHANCEMENT 6
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
• <b>WE</b> + + + +	WETLAND ENHANCEMENT AREA 5
SBE X	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

### 3 REMOVE GRAVEL PAVING. 4 REMOVE STRUCTURE IN THIS AREA. PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (5) PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (6)



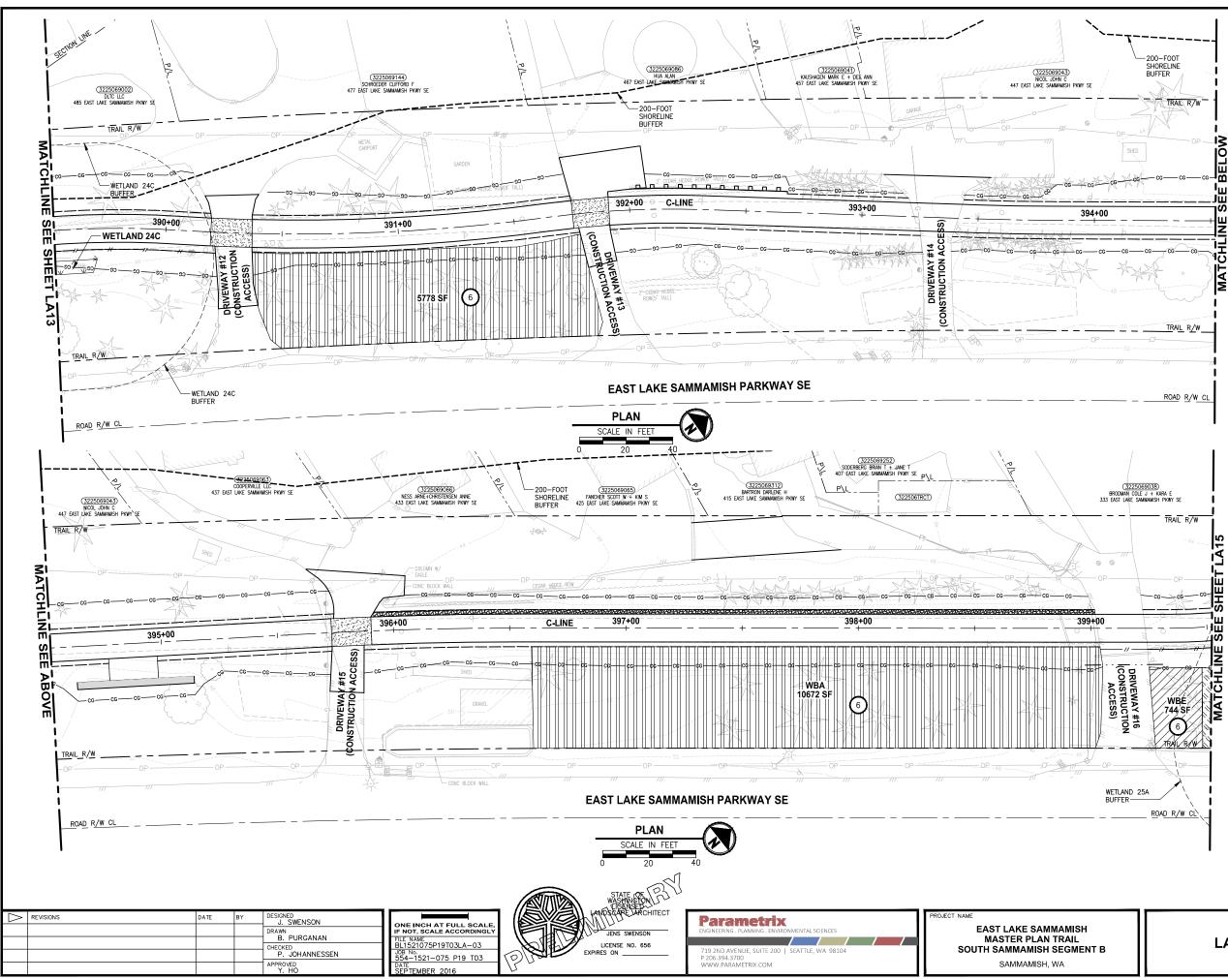
GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

#### GENERAL NOTE:

- LA23 FOR DETAILS AND PLANT LISTS.
- DR REMOVED DRIVEWAYS IS NOT PART OF TION PLAN.

(1) REMOVE LAWN IN THIS AREA. 2 REMOVE CONCRETE PAD.

CONSTRUCTION NOTES:



#### CONSTRUCTION NOTES:

- 1 REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (5)

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#### GENERAL NOTE:

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

WBE	wetland buffer enhancement $6$
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + + + + + + + + + + + + + + + + + +	WETLAND ENHANCEMENT AREA 5
SBE SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

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City Engineer	Date
Community Development	Date

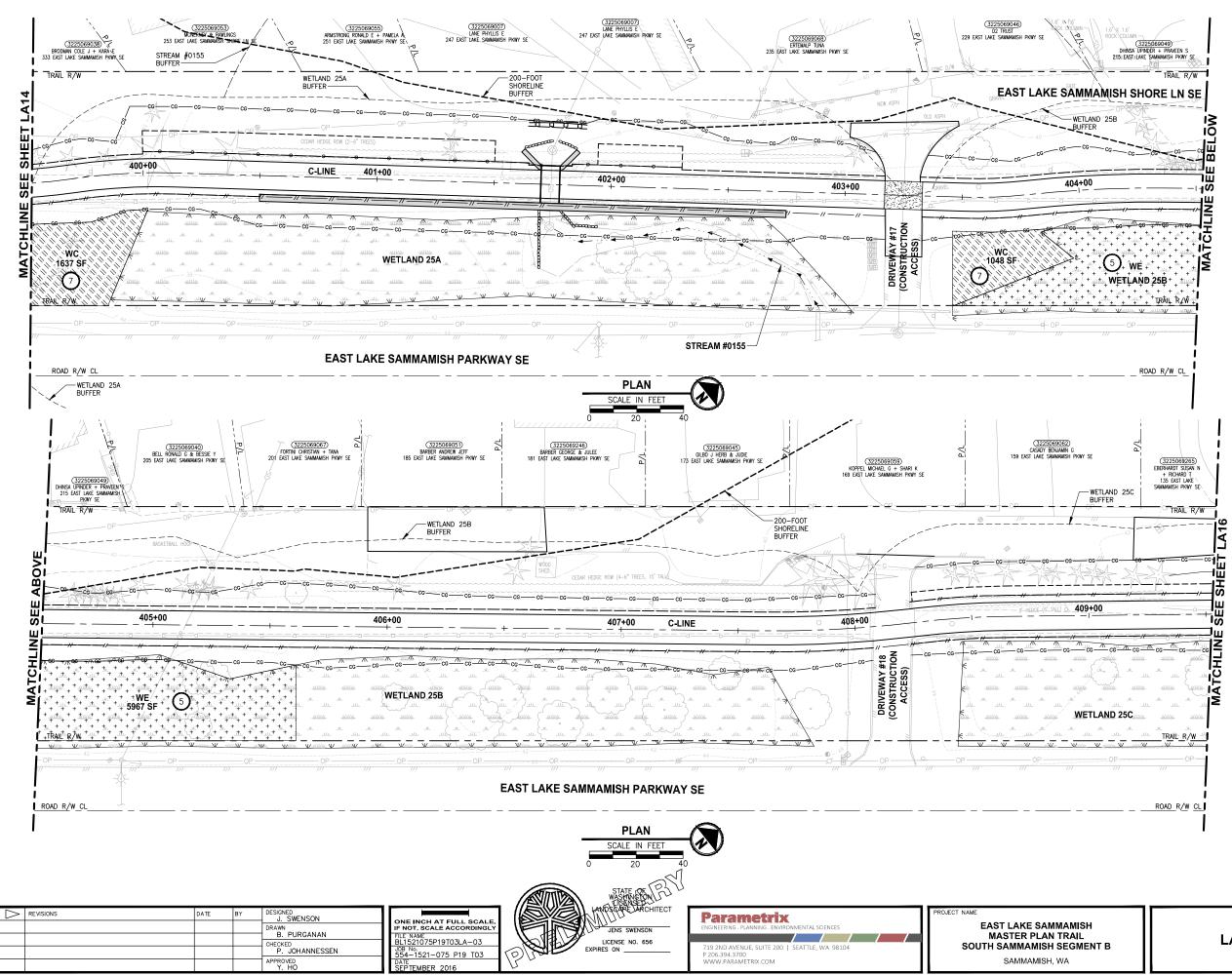
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SHEET NO. 126 OF 135

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WETLAND PLANTS.

CONSTRUCTION NOTES:

1 REMOVE LAWN IN THIS AREA.

2 REMOVE CONCRETE PAD.

3 REMOVE GRAVEL PAVING.

(5)

(6)

4 REMOVE STRUCTURE IN THIS AREA.

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

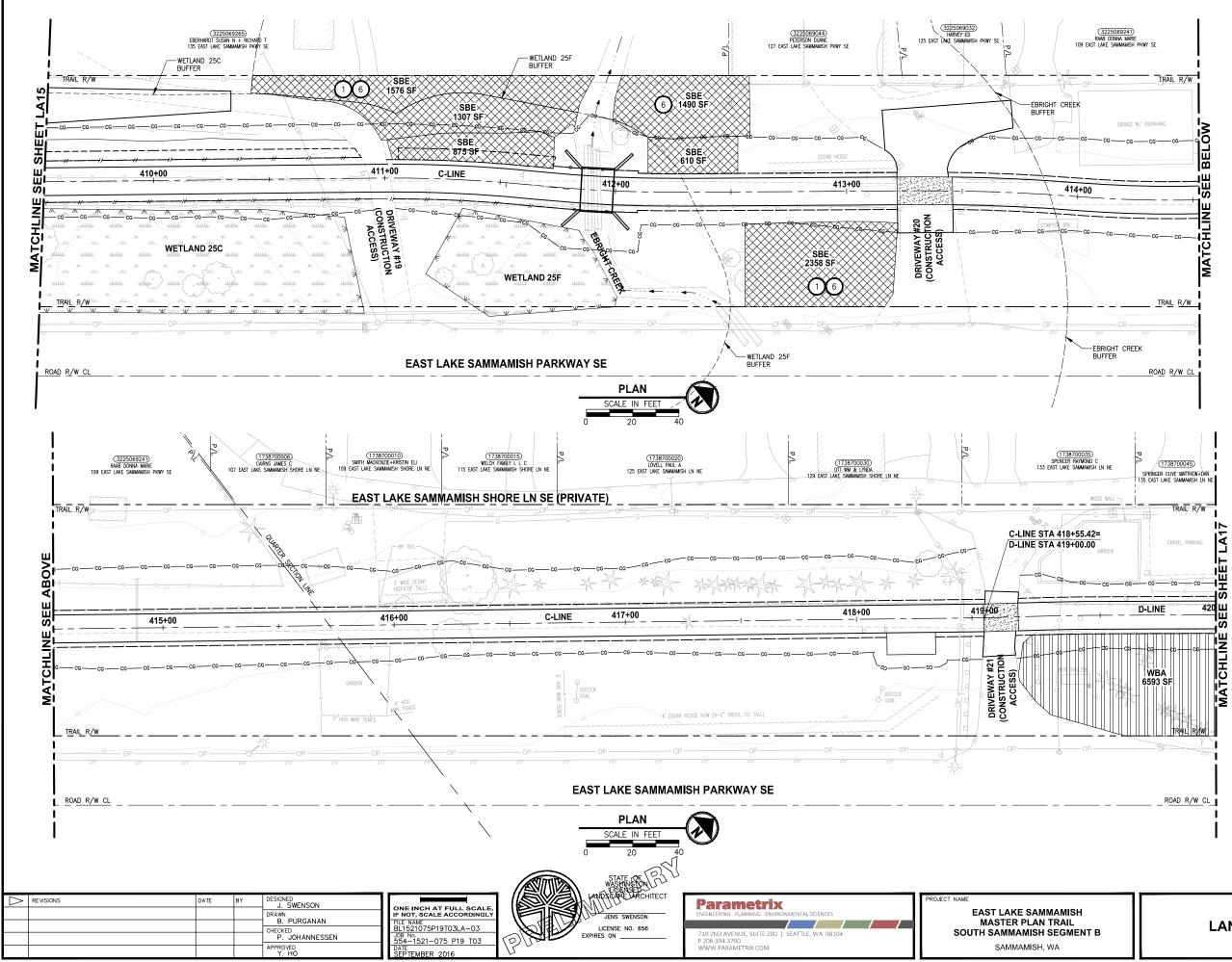
PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.

GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE

#### LEGEND:

WBE	WETLAND BUFFER ENHANCEMENT 6
WBA	wetland buffer addition area 6
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ <b>WE</b> + + +	WETLAND ENHANCEMENT AREA
SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.



#### CONSTRUCTION NOTES:

- 1 REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (5)

- FOOD CITE EXISTING NATIVE THEES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
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#### GENERAL NOTE:

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

WBE	wetland buffer enhancement $6$
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA
SBE SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

CITY	OF	SAMMAMISH	APPROVAL

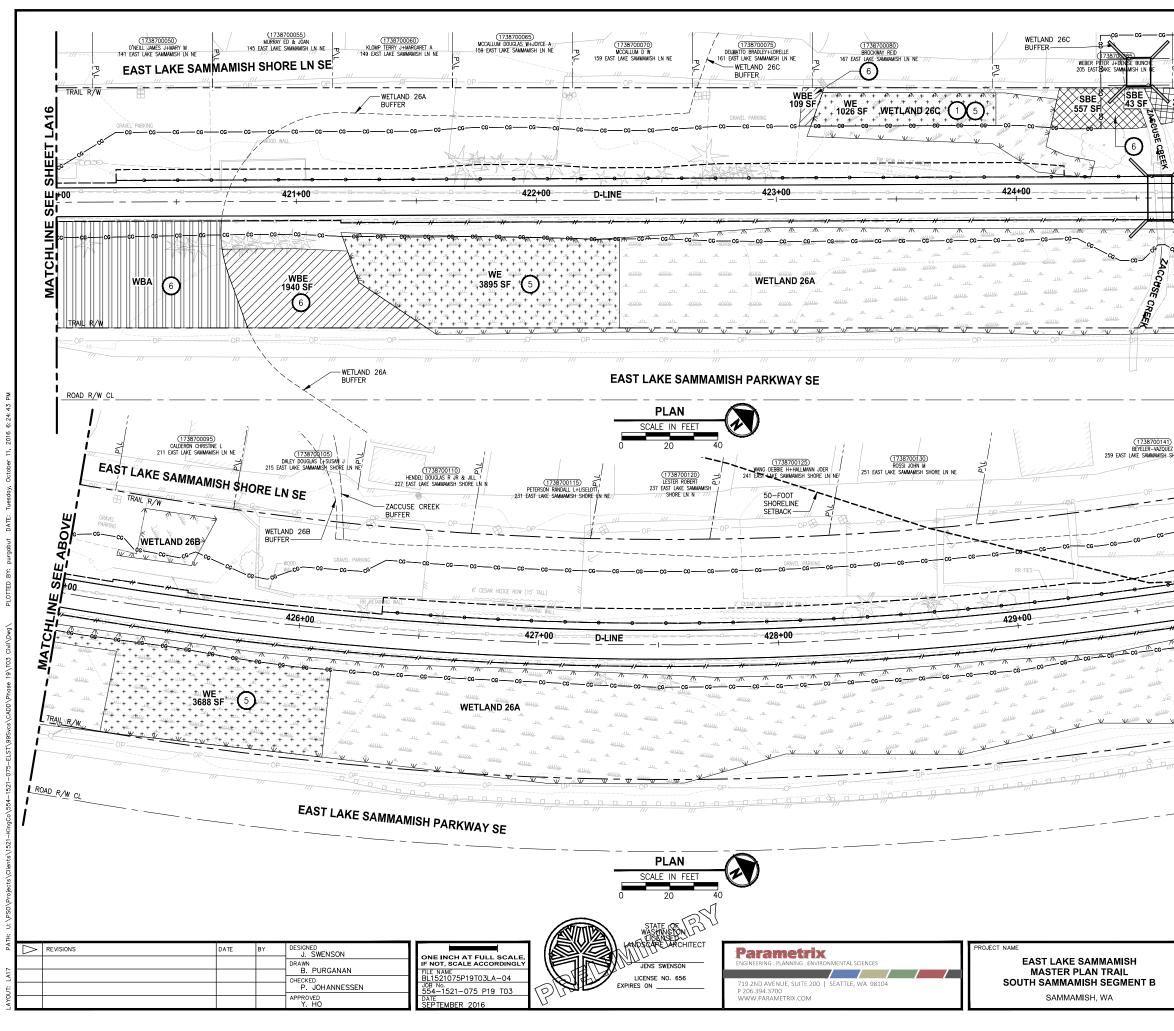
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SHEET NO. 128 OF 135

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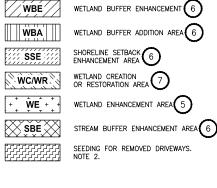


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CITY OF SAMMAMISH	APPROVAL
City Engineer	Date



City Engineer	Date
City Engineer	Date
Community Development	Date



#### LEGEND: WBÉ (

5	PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
6	PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLI WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
7	GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

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#### **GENERAL NOTE:**

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.
- MATCHLINE WĚ TRAIL R/W ROAD R/W_C MATCHLINE

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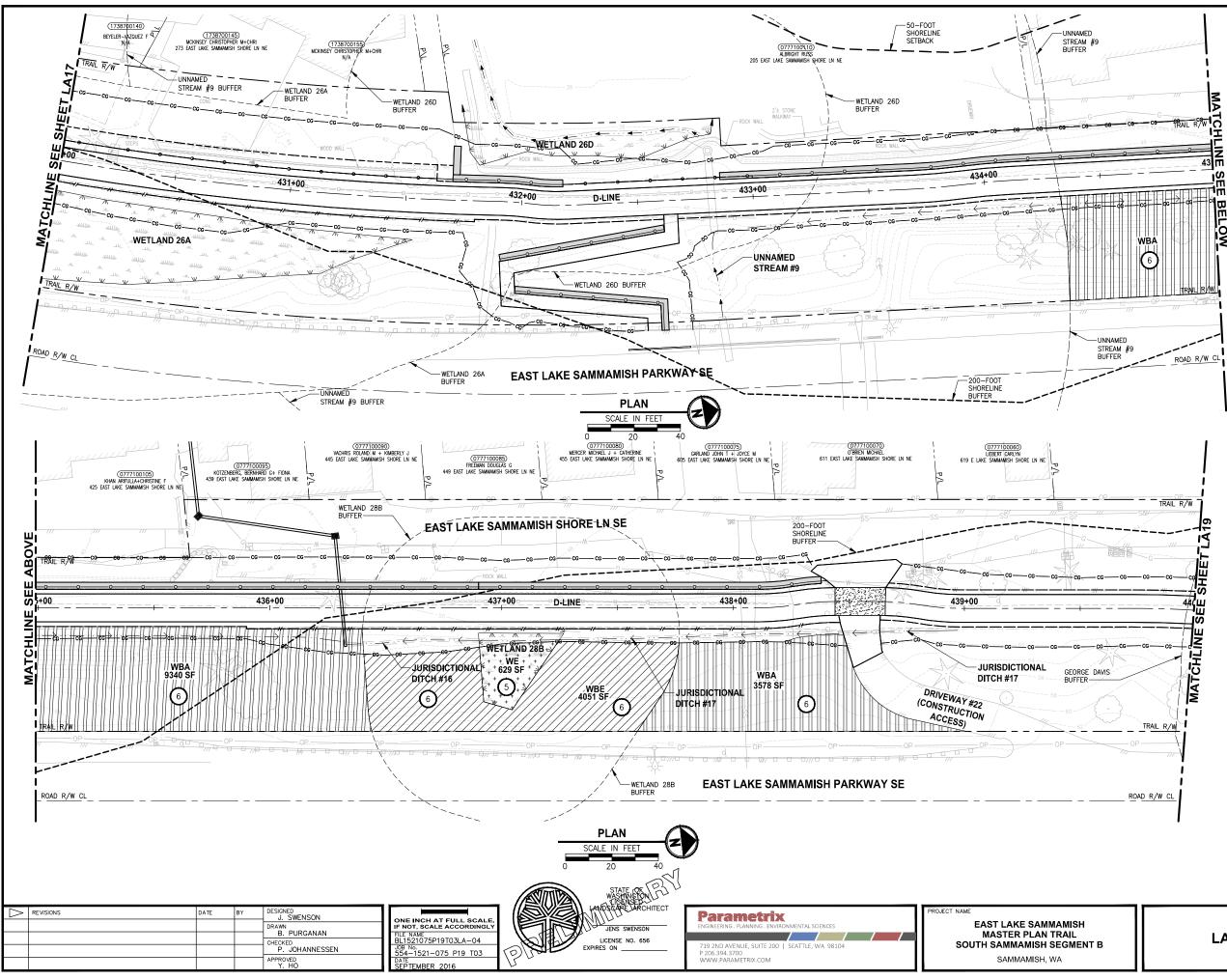
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### CONSTRUCTION NOTES:

- 1 REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

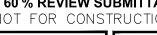


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CITY OF SAMMAMISH APPROVAL

City Engine

Community Development

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	LEGEND:	
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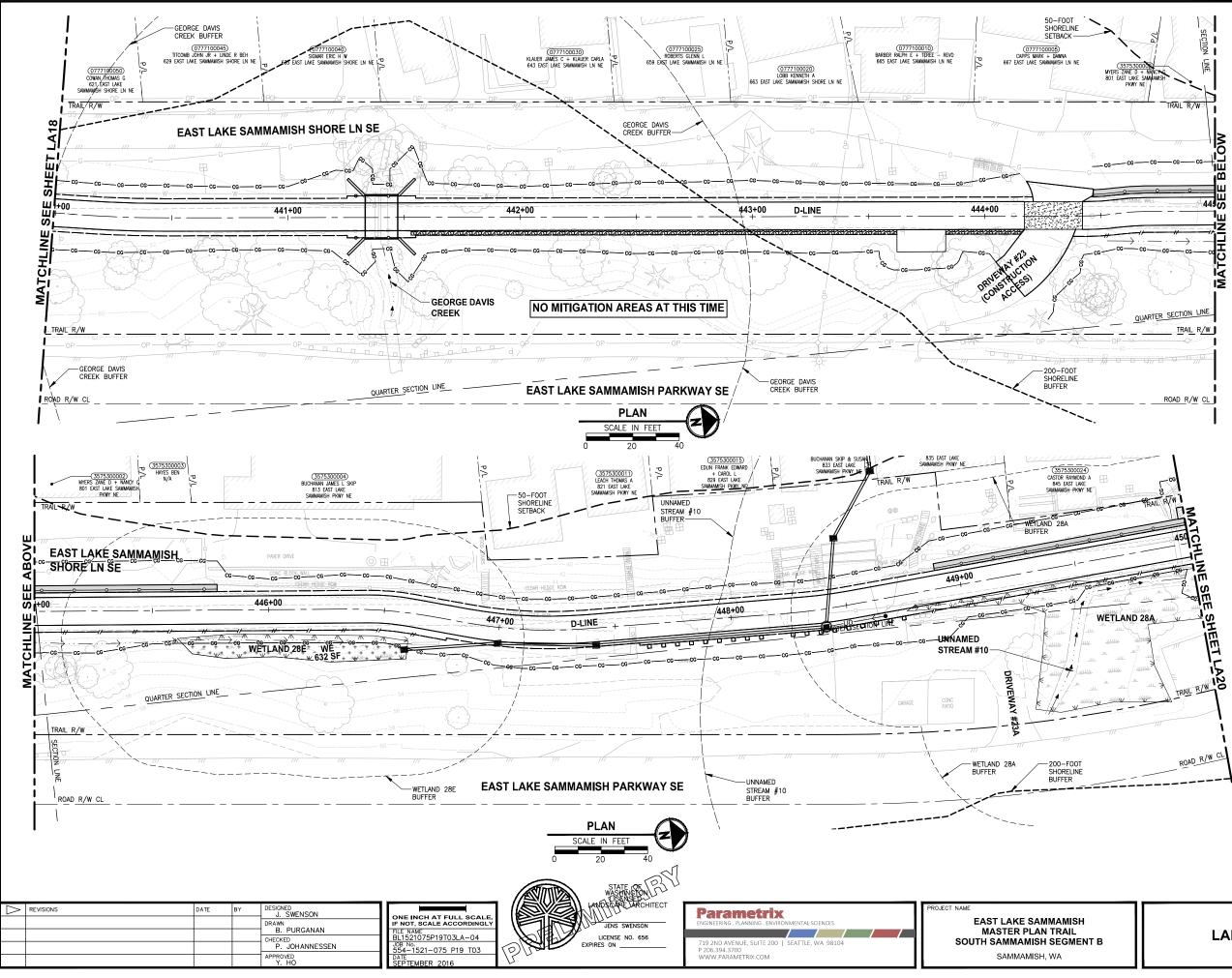
LLOLIND.	
WBE	WETLAND BUFFER ENHANCEMENT 6
WBA	wetland buffer addition area $6$
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA 5
<b>SBE</b>	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.

# 4 REMOVE STRUCTURE IN THIS AREA.

- 5 PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
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- CREATE WETLAND CONDITIONS AND COMPOST, PLANT WITH NATIVE
- 3 REMOVE GRAVEL PAVING.

CONSTRUCTION NOTES:

1 REMOVE LAWN IN THIS AREA. 2 REMOVE CONCRETE PAD.



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SHEET NO. 131 OF 135

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City Engine Date Community Development Date

CITY OF SAMMAMISH APPROVAL



### CONSTRUCTION NOTES:

- 1 REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.

PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (5)

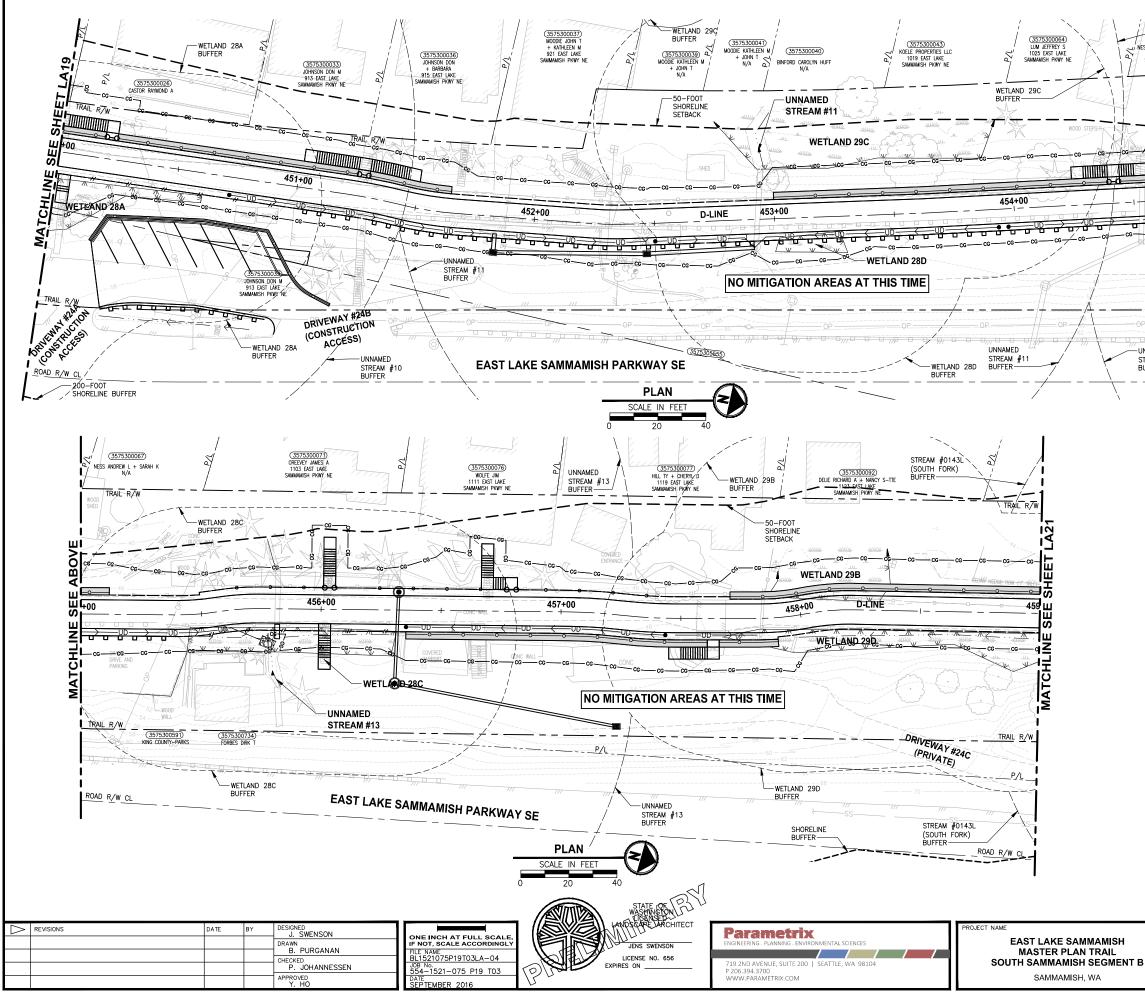
- PROTECT EXISTING NATIVE TREES AND SHRUBS; (6) REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA.
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

#### GENERAL NOTE:

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

WETLAND BUFFER ENHANCEMENT 6
wetland buffer addition area $6$
SHORELINE SETBACK 6
WETLAND CREATION OR RESTORATION AREA (7)
WETLAND ENHANCEMENT AREA
STREAM BUFFER ENHANCEMENT AREA
SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.



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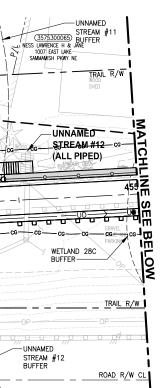
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SHEET NO 132 OF 135

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CITY OF SAMMAMISH APPROVAL		
City Engineer	Date	
Community Development	Date	

LEGEND:	
WBE	wetland buffer enhancement $6$
WBA	WETLAND BUFFER ADDITION AREA 6
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA 5
SBE SBE	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.



#### 2 REMOVE CONCRETE PAD. 3 REMOVE GRAVEL PAVING. 4 REMOVE STRUCTURE IN THIS AREA. PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; (5) PLANT WITH NATIVE WETLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. PROTECT EXISTING NATIVE TREES AND SHRUBS; (6) REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

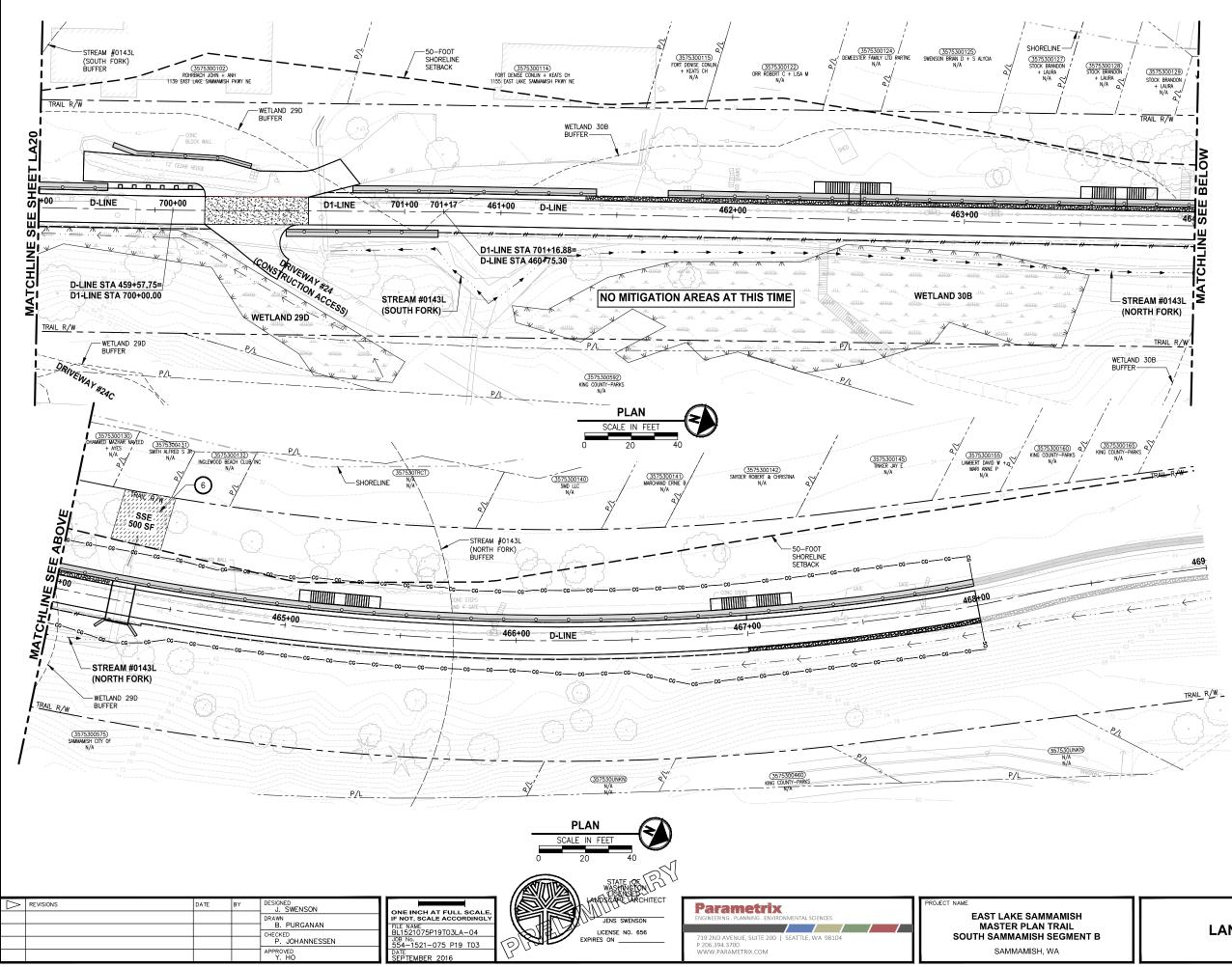
1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.

2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

CONSTRUCTION NOTES:

1 REMOVE LAWN IN THIS AREA.

**GENERAL NOTE:** 



LA21

SHEET NO. 133 OF 135

City Engineer	Date
Community Development	Date

CITY OF SAMMAMISH APPROVAL

City Engineer	Date
Community Development	Date











#### CONSTRUCTION NOTES:

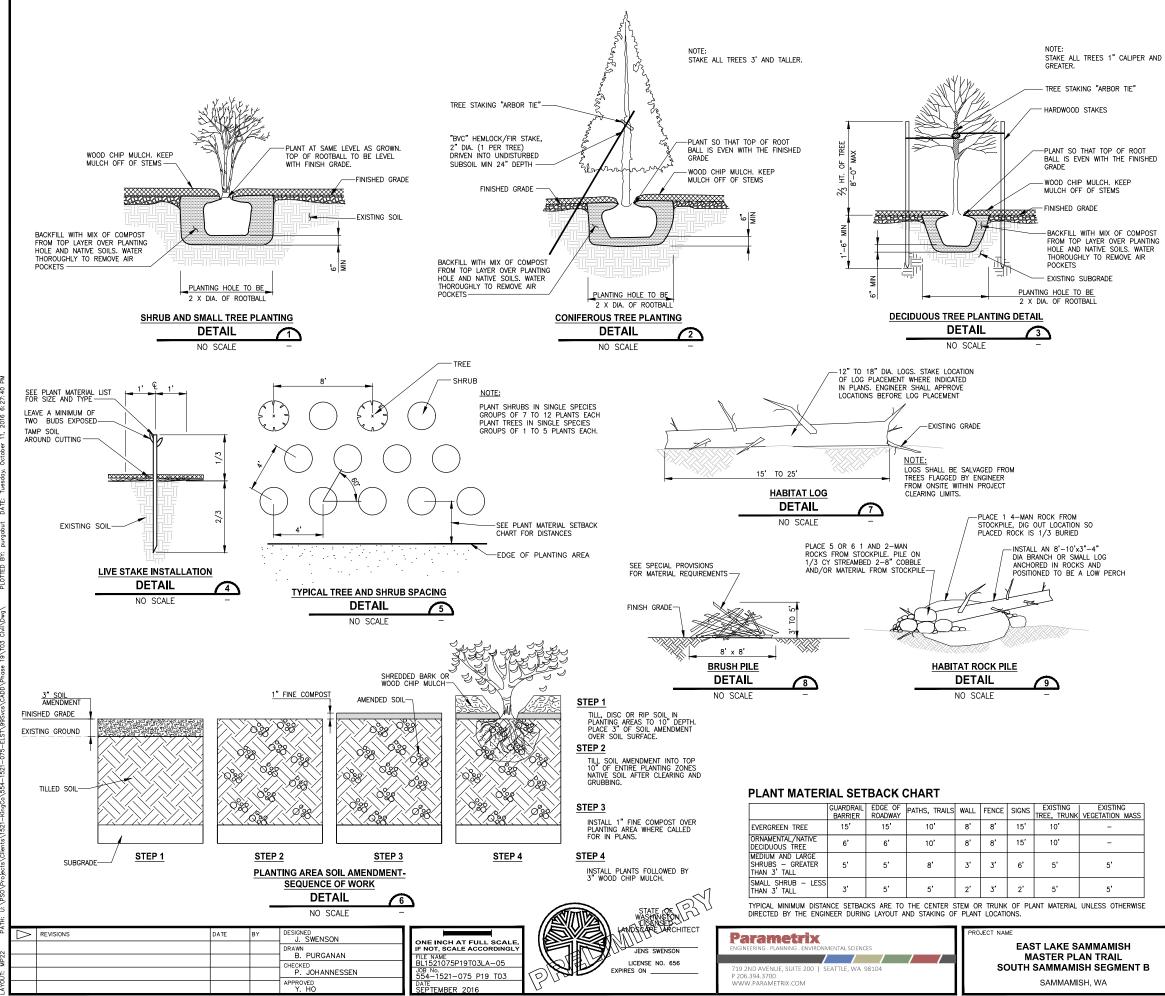
- 1 REMOVE LAWN IN THIS AREA.
- 2 REMOVE CONCRETE PAD.
- 3 REMOVE GRAVEL PAVING.
- 4 REMOVE STRUCTURE IN THIS AREA.
- PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOLL WITH COMPOST; PLANT WITH NATIVE WEITLAND PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (5)
- PROTECT EXISTING NATIVE TREES AND SHRUBS; REMOVE BLACKBERRY AND OTHER UNWANTED INVASIVE PLANTS; AMEND SOIL WITH COMPOST; PLANT WITH NATIVE BUFFER PLANTS AND PLACE WOOD CHIP MULCH OVER ENTIRE AREA. (6)
- GRADE AREA TO CREATE WETLAND CONDITIONS AND AMEND SOIL WITH COMPOST, PLANT WITH NATIVE WETLAND PLANTS.

#### **GENERAL NOTE:**

- 1. SEE SHEET LA23 FOR DETAILS AND PLANT LISTS.
- 2. SEEDING FOR REMOVED DRIVEWAYS IS NOT PART OF THE MITIGATION PLAN.

#### LEGEND:

WBE	WETLAND BUFFER ENHANCEMENT 6
WBA	wetland buffer addition area 6
SSE	SHORELINE SETBACK 6
WC/WR	WETLAND CREATION OR RESTORATION AREA (7)
+ + <b>WE</b> + + +	WETLAND ENHANCEMENT AREA
<b>SBE</b>	STREAM BUFFER ENHANCEMENT AREA
	SEEDING FOR REMOVED DRIVEWAYS. NOTE 2.



**MITIGATION PLANTING DETAILS** 

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SHEET NO.

**60 % REVIEW SUBMITTAL** NOT FOR CONSTRUCTION

CITY OF SAMMAMISH	APPROVAL
City Engineer	Date
Community Development	Date

CITY	OF	SAMMAMISH	APPROVAL

		1	
COMMON NAME	BOTANICAL NAME	NOTES	
TREES			
AMELANCHIER ALNIFOLIA	WESTERN SERVICEBERRY	SPACE TREES 8	
CORNUS NUTTALLII	PACIFIC DOGWOOD	TO 10-FEET ON CENTER	
PICEA SITCHENSIS	SITKA SPRUCE		
PRUNUS EMARGINATA	BITTER CHERRY		
PSUEDOTSGA MENZIESII	DOUGLAS FIR		
THUJA PLICATA	WESTERN RED CEDAR		
TSUGA HETEROPHYLLA	WESTERN HEMLOCK		
SHRUBS			
ACER CIRCINATUM	VINE MAPLE	SPACE SHRUBS	
CORYLUS CORNUTA	WESTERN HAZEL	TO 6-FEET ON CENTER	
HOLODISCUS DISCOLOR	OCEAN SPRAY		
OEMLARIA CERASIFORMIS	INDIAN PLUMB	1	
PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	1	
ROSA NUTKANA	NOOTKA ROSE	-	
SYMPHORICARPOS ALBUS	SNOWBERRY		
WETLAND CREATION, RESTORATION AND ENHANCEMENT PLANTING AREAS (AREAS WC/WR,WE,WE)			
TREES			
FRAXINUS LATIFOLIA	OREGON ASH	SPACE TREES 8 TO 10-FEET ON	
PICEA SITCHENSIS	SITKA SPRUCE	CENTER	
SALIX L. SSP. LASIANDRA	PACIFIC WILLOW	4	
SALIX SCOULERIANA	SCOULERS WILLOW	4	
THUJA PLICATA	WESTERN RED CEDAR		
SHRUBS			
CORNUS SERICEA	RED-TWIG DOGWOOD	SPACE SHRUBS TO 6-FEET ON CENTER	
LONICERA INVOLUCRATA	BLACK TWINBERRY		
MALUS FUSCA	PACIFIC CRAB APPLE	4	
PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	-	
ROSA PISOCARPA	CLUSTERED ROSE	4	
SALIX HOOKERIANA	HOOKERS WILLOW	-	
SALIX SITCHENSIS SYMPHORICARPOS ALBUS	SITKA WILLOW	-	
EMERGENTS	SNOWBERRI		
HARDSTEM BULRUSH	SCIRPUS ACUTUS	SPACE	
DAGGER-LEAVED RUSH	JUNCUS ENSIFOLIUS	EMERGENT	
OREGON IRIS	IRIS TENAX	PLANTS 12 TO	
SLOUGH SEDGE	CAREX OBNUPTA	24-INCHES ON CENTER	
SMALL-FRUITED BULRUSH	SCIRPUS MICROCARPUS	-	
TUFTED HAIRGRASS	DESCHAMPSIA	1	
	CESPITOSA		
STREAM BUFFER ENHANCEMENT PLANTING AREAS (AREA SBE)			
TREEC			
TREES			
FRAXINUS LATIFOLIA PICEA SITCHENSIS	OREGON ASH SITKA SPRUCE	SPACE TREES 8 TO 10-FEET ON	
		CENTER	
SALIX L. SSP. LASIANDRA SALIX SCOULERIANA	PACIFIC WILLOW SCOULERS WILLOW	-	
THUJA PLICATA	WESTERN RED CEDAR	+	
SHRUBS	THE STERN RED CEDAR		
ACER CIRCINATUM	VINE MAPLE		
CORNUS SERICEA	RED-TWIG DOGWOOD	SPACE SHRUBS	
LONICERA INVOLUCRATA	BLACK TWINBERRY	TO 6-FEET ON	
PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	CENTER	
SALIX HOOKERIANA	HOOKERS WILLOW	-	
SALIX HOUKERIANA SALIX SITCHENSIS	SITKA WILLOW	4	
	JULIA WILLOW	1	
SYMPHORICARPOS ALBUS	SNOWBERRY	1	

PLANT MATERIAL LIST WETLAND SHORELINE SETBACK AND WETLAND BUFFER ADDITION PLANTING (AREAS WBA, SSE, WBE)

LA22

#### 1 MITIGATION GOALS, OBJECTIVES, AND PERFORMANCE STANDARDS

THE OVERALL GOAL OF THE MITIGATION IS TO REPLACE THE HABITATS AND FUNCTIONS LOST AS A RESULT OF THE PROJECT. THE PROPOSED MITIGATION WOULD ACCOMPLISH THIS BY REPLACING A FISH BARRIER CULVERT THE PROJECT. THE PROPOSED MITIGATION WOULD ACCOMPLISH THIS BY REPLACING A FISH BARRIER CULVERT ON A TYPE F STREAM WITH A WIDER AND SHORTER PIPE THAT IS FISH PASSABLE, INCREASING THE BUFFER OF A LAKE FRINGE WEITLAND BY 0.50 ACRE, BHHANCING 0.05 ACRE OF WEITLAND BUFFER, ENHANCING 0.49 ACRE OF STREAM BUFFER, AND ENHANCING 0.03 ACRE OF SHORELINE SETBACK. SPECIFIC GOALS AND DEFENSIVE CONJUNITY TO ACTION THE THIS DEFENSIVE OF USE DATE. OBJECTIVES FORMULATED TO ACHIEVE THIS RESULT ARE PRESENTED BELOW.

#### **1.1 MITIGATION GOALS**

#### THE MITIGATION GOALS ARE:

- REPLACE A FISH BARRIER CULVERT AND REMOVE TWO FISH BARRIER BOULDERS ON A TYPE F STREAM
  WITH A FISH PASSABLE CULVERT.
- . INCREASE AND ENHANCE THE BUFFER OF A LAKE FRINGE WETLAND BY 0.50 ACRE.
- ENHANCE 0.05 ACRE OF WETLAND BUFFER.
- ENHANCE 0.49 ACRE OF STREAM BUFFER.
- ENHANCE 0.03 ACRE OF SHORELINE SETBACK.

ACHIEVEMENT OF THESE GOALS IS EXPECTED TO PROVIDE THE FOLLOWING IMPROVEMENTS TO STREAM, WETLAND BUFFER, STREAM BUFFER, AND SHORELINE SETBACK FUNCTIONS:

- PROVIDE ADDITIONAL FISH HABITAT BY REMOVING FISH BARRIERS, INCREASING OPEN STREAM CHANNEL, AND OPENING UP AVAILABLE UPSTREAM HABITAT.
- INCREASE THE PRODUCTION OF ORGANIC MATTER BY PLANTING TREES AND SHRUBS IN THE INCREASED
   WETLAND BUFFER, ENHANCED WETLAND BUFFER, ENHANCED STREAM BUFFER, AND ENHANCED SHORELINE SETBACK.
- INCREASE FISH AND WILDLIFE HABITAT AND IMPROVE BIOLOGICAL DIVERSITY BY PLANTING WITH A VARIETY
   OF NATIVE WETLAND AND BUFFER PLANT SPECIES AND INSTALLING HABITAT FEATURES (HABITAT LOGS AND BRUSH PILES).

#### 1.2 MITIGATION OBJECTIVES AND PERFORMANCE STANDARDS INSTREAM HABITAT

OBJECTIVE 1. OBJECTIVE 1: REPLACE EXISTING PERCHED CULVERT ON STREAM 0143D WITH FISH PASSAGE CULVERT AND REMOVE TWO FISH BARRIER BOULDERS TO OPEN UP AVAILABLE UPSTREAM HABITAT. PERFORMANCE STANDARDS:

YEAR 1 AND 2 CONSTRUCTED HABITAT ELEMENTS INCLUDING THE NEW FISH PASSABLE CULVERT, REGRADED CHANNEL, AND STREAMBED MATERIAL WILL REMAIN IN PLACE AS CONSTRUCTED.

BUFFER PLANT COMMUNITIES OBJECTIVE 2: ESTABLISH A MINIMUM OF 0.55 ACRE FORESTED WETLAND BUFFER, 0.49 ACRE FORESTED STREAM BUFFER, AND 0.03 ACRE FORESTED SHORELINE SETBACK AT THE INCREASED WETLAND BUFFER, ENHANCED WETLAND BUFFER, ENHANCED STREAM BUFFER, AND ENHANCED SETBACK AREAS.

PERFORMANCE STANDARDS:

YEAR 1 SURVIVAL OF PLANTED WOODY SPECIES IN ENHANCED WETLAND BUFFER, STREAM BUFFER, AND SHORELINE SETBACK AREAS WILL BE AT LEAST 80 PERCENT.

YEAR 3 NATIVE WOODY SPECIES WILL ACHIEVE A MINIMUM OF 35 PERCENT AREAL COVER IN THE ENHANCED WETLAND BUFFER, STREAM BUFFER, AND SHORELINE SETBACK AREAS.

YEAR 5 NATIVE WOODY SPECIES WILL ACHIEVE A MINIMUM OF 60 PERCENT AREAL COVER IN THE ENHANCED WETLAND BUFFER, STREAM BUFFER, AND SHORELINE SETBACK AREAS. OBJECTIVE 3: LIMIT INVASIVE NON-NATIVE SPECIES THROUGHOUT THE MITIGATION SITE PLANTING AREAS.

PERFORMANCE STANDARD YEARS 1-5 HIMALAYAN BLACKBERRY, CUTLEAF BLACKBERRY, SCOTCH BROOM, ENGLISH IVY, AND REED CANARYGRASS WILL NOT EXCEED 20 PERCENT AREAL COVER IN ALL PLANTING AREAS.

YEAR 3 100 PERCENT REMOVAL OF JAPANESE KNOTWEED BY YEAR 3 IN THE STREAM 0143D VICINITY MITIGATION AREA.

OBJECTIVE 4: DOCUMENT SITE DEVELOPMENT.

#### PERFORMANCE STANDARD:

PERMANENT PHOTOGRAPHIC STATIONS WILL BE ESTABLISHED TO MONITOR THE DEVELOPMENT OF THE SITES. PHOTOGRAPHS WILL BE TAKEN ALONG TRANSECT LINES AND FROM VANTAGE POINTS THAT CAPTURE THE GENERAL MITIGATION AREA. ALL PHOTOGRAPHS WILL BE LABELED TO IDENTIFY LOCATIONS.

WILDLIFE HABITAT

OBJECTIVE 5: PROVIDE UPLAND WILDLIFE HABITAT.

PERFORMANCE STANDARD:

YEARS 1, 3, 5 INCREASE IN AREAL COVER OF NATIVE WOODY SPECIES IN THE PLANTED WETLAND BUFFER, STREAM BUFFER, AND SHORELINE SETBACK, AS MEASURED IN OBJECTIVES 2 AND 3, TO BE USED AS A SURROGATE TO INDICATE INCREASING HABITAT FUNCTIONS.

INSTALLED HABITAT FEATURES ARE PRESENT AND FUNCTIONAL YEAR 5

ANTHROPOGENIC DISTURBANCE

OBJECTIVE 6: PROTECT THE MITIGATION SITES FROM ANTHROPOGENIC DISTURBANCE.

PERFORMANCE STANDARD:

- YEARS 1-5 CONDUCT QUALITATIVE MONITORING TO ASSESS THE STATUS OF THE SITES ANNUALLY DURING THE 5-YEAR MONITORING PERIOD TO MONITOR FOR HUMAN DISTURBANCE, INCLUDING BUT NOT LIMITED TO FILLING, TRASH, AND VANDALISM.
- YEARS 1-5 INSTALL AND MAINTAIN FENCES AND APPROPRIATE SIGNS ALONG THE TRAIL AND ADJACENT TO EACH SITE TO IDENTIFY THEIR PROTECTED STATUS.

#### 2 MONITORING AND MAINTENANCE

#### 2.1 MONITORING

THE MITIGATION AREAS WILL BE MONITORED DURING AND AFTER CONSTRUCTION. DURING CONSTRUCTION, MONITORING WILL ENSURE THAT THE BMPS ARE OBSERVED TO MINIMIZE IMPACTS, AND THE ON-SITE CONSTRUCTION WORK (INCLUDING GRADING AND PLANTING) WILL BE COORDINATED TO ENSURE THAT THE SITES ARE CONSTRUCTED AS DESIGNED.

AFTER CONSTRUCTION IS COMPLETED, MONITORING WILL BE PERFORMED ANNUALLY TO ENSURE THAT THE GOALS AND OBJECTIVES OF THE MITIGATION AREAS WILL BE PERFORMED OVER A 5-YEAR PERIOD BY A QUALIFIED PROFESSIONAL (SAMMAMISH MUNICIPAL CODE 21A.50.145: 21A.50.300), A COMBINATION OF QUANTITATIVE AND QUALITATIVE MONITORING METHODS WILL BE USED TO ASSESS THE WOMBINATION OF GUANTITATIVE AND QUALITATIVE MONITORING METHODS WILL BE USED TO ASSESS THE MANAGEMENT OBJECTIVES AND ASSOCIATED PERFORMANCE STANDARDS DESCRIBED IN THE MITIGATION PLAN. ACTIVITIES WILL INCLUDE SITE VISITS TO MONITOR UNNATURAL SITE DISTURBANCE, PHOTOGRAPHS TO DOCUMENT SITE DEVELOPMENT, AND DATA COLLECTION FOR THE QUANTITATIVE EVALUATION OF PERFORMANCE STANDARDS. THE RESULTS OF THE MONITORING WILL BE SUBMITTED TO THE PERMITTING

APPROPRIATE CONTINGENCY MEASURES WILL BE DEVELOPED, AS NEEDED, BY A QUALIFIED PROFESSIONAL TO ENSURE THAT THE SITES DEVELOP HEALTHY VEGETATION THAT MEETS THE OBLIGATIONS DESCRIBED IN THIS MITIGATION PLAN AND THE ASSOCIATED PERMITS.

#### 2.1.1 QUANTITATIVE MONITORING

THE FOLLOWING BULLETED ITEMS DESCRIBE THE METHODS TO BE USED FOR THE QUANTITATIVE MONITORING, MONITORING SCHEDULE, AND REPORT DEADLINES.

- THE ENHANCEMENT SITES WILL BE ASSESSED BY AN APPROPRIATE QUANTITATIVE VEGETATIVE COVER FIELD
   ASSESSMENT METHODOLOGY. THE LINE INTERCEPT METHOD WILL BE USED FOR DETERMINING PERCENT AREAL COVER FOR WOODY AND INVASIVE SPECIES.
- QUANTITATIVE VEGETATION ASSESSMENTS WILL FOLLOW THE SAME METHOD IN EACH CONSECUTIVE MONITORING YEAR.
- QUANTITATIVE VEGETATION ASSESSMENTS WILL BE PERFORMED BETWEEN JUNE 15 AND SEPTEMBER 15
   OF EACH MONITORING YEAR.
- MONITORING REPORTS WILL BE SENT TO AGENCIES REQUIRING MONITORING REPORTS BY FEBRUARY 15 OF THE FOLLOWING YEAR.
- QUANTITATIVE MONITORING WILL INCLUDE PHOTOGRAPHIC DOCUMENTATION OF THE SITES FROM
   PERMANENT PHOTOGRAPH STATIONS.

#### 2.1.2 QUALITATIVE MONITORING

QUALITATIVE MONITORING WILL BE CONDUCTED AS FOLLOWS:

- A QUALIFIED PROFESSIONAL WILL QUALITATIVELY ASSESS THE CONSTRUCTED HABITAT ELEMENTS INCLUDING
  THE NEW FISH PASSABLE CULVERT, REGRADED CHANNEL, AND STREAMBED MATERIAL FOR THE FIRST 2 YFARS
- QUALITATIVE ASSESSMENT WILL BE PERFORMED YEARLY TO VISUALLY ASSESS THE HEALTH OF PLANTS AND IDENTIFY AREAS THAT MAY NEED CONTROL OF NON-NATIVE INVASIVE SPECIES OR OTHER MAINTENANCE ACTIVITIES.

#### 2.2 MAINTENANCE

ATTIT

WASHINGT CICANSE LANDSCAPE JAF

EXPIRES ON

JENS SWENSON

LICENSE NO. 656

THE PROPOSED MITIGATION IS INTENDED TO ACHIEVE THE PERFORMANCE STANDARDS WITH MINIMAL ONGOING MAINTENANCE. HOWEVER, KING COUNTY WILL MANAGE AND MAINTAIN THE SITE FOR 5 YEARS, OR UNTIL ALL PERFORMANCE STANDARDS ARE MET AND THE SITE IS CLOSED WITH THE APPROVAL OF PERMITTING AGENCIES.

PLANTED VEGETATION SPECIES SHOULD BE ADAPTED TO VARYING SITE CONDITIONS IN THE PUGET SOUND LOWLAND, THOUGH SUPPLEMENTAL IRRIGATION MAY BE NEEDED DURING THE FIRST TWO GROWING SEASONS AFTER INSTALLATION TO ENSURE THE LONG-TERM SURVIVAL OF THE PLANTS. THE NEED FOR IRRIGATION WILL BE EVALUATED BASED ON THE CONDITIONS OBSERVED DURING THE ESTABLISHMENT PERIOD.

TO ENSURE RAPID ESTABLISHMENT OF THE PLANT COMMUNITY, TREES AND SHRUBS WILL BE PLANTED CLOSER TOGETHER THAN WOULD GENERALLY OCCUR IN NATURAL MATURE STANDS. SOME NATURAL MORTALITY IS EXPECTED TO OCCUR DURING THE MONITORING PERIOD. ALL DEAD AND DOWNED WOODY MATERIAL WILL BE LEFT IN PLACE TO PROVIDE MICROHABITATS FOR WILDLIFE. PLANTS WILL BE REPLACED AS NEEDED TO MEET PERFORMANCE STANDARDS.

MAINTENANCE TO CONTROL NUISANCE SPECIES IN THE MITIGATION AREAS MAY BE NECESSARY. DURING THE MONITORING PERIOD, IF IT BECOMES EVIDENT THAT INVASIVE SPECIES ARE IMPEDING ESTABLISHMENT OF DESIRABLE NATIVE PLANTS, MEASURES WILL BE INFLMENTED TO CONTROL NUISANCE SPECIES. A PROGRESSIVELY AGGRESSIVE APPROACH WILL BE USED TO CONTROL NUISANCE SPECIES. CONTROL MEASURES WILL FIRST INCLUDE HAND CUTTING AND/OR GRUBBING AND REMOVAL; IF THIS FAILS, AN ENVIRONMENTALLY SENSITIVE HERBICIDE (E.G., RODEO OR EQUIVALENT) MAY BE APPLIED.

PR LESS THAN 80% SPECIES SURVIVE

PERCENT COVER MET DURING YEA

INVASIVE SPECIES COVER THRESHOL PERFORMANCE S AT YEAR 5

PERFORMANCE STANDARDS

PAT	$\supset$	REVISIONS	DATE	BY	DESIGNED J. SWENSON	ONE INCH AT FULL SCALE.	
23					DRAWN B. PURGANAN	IF NOT, SCALE ACCORDINGLY	
T: MP					. CHECKED P. JOHANNESSEN	BL1521075P19T03LA-05 JOB No. 554-1521-075 P19 T03	
LAYOU					APPROVED Y. HO	DATE SEPTEMBER 2016	L'EL.

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#### 2.3 CONTINGENCY MEASURES

IF MONITORING INDICATES THAT THE SITES ARE NOT MEETING PERFORMANCE STANDARDS, CONTINGENCY MEASURES WILL BE IMPLEMENTED (TABLE 2-1). SITE CONDITIONS WILL BE EVALUATED TO DETERMINE THE CAUSE OF THE PROBLEM AND THE MOST APPROPRIATE COUNTERMEASURE.

TABLE 2-1. CONTINGENCY MEASURES FOR THE MITIGATION SITE

ROBLEM	CONTINGENCY MEASURE
OF PLANTED WOODY E IN YEAR 1	KING COUNTY BIOLOGISTS (OR OTHER QUALIFIED BIOLOGIST) WILL ASSESS THE SITES TO DETERMINE WHAT CONDITIONS ARE PREVENTING THE PLANTS FROM THRIVING. APPROPRIATE MEASURES WILL BE TAKEN TO CORRECT ANY CONDITIONS THAT ARE LIMITING GROWTH. LOST PLANTS WILL BE REPLACED WITH APPROPRIATE NATIVE SPECIES UNLESS APPROPRIATE NATIVE WOODY SPECIES ARE VOLUNTEERING AT A RATE SUFFICIENT TO REPLACE THEM. ADDITIONAL MEASURES (SUCH AS PROVIDING ADDITIONAL PROTECTION) WILL BE CONSIDERED IF NECESSARY.
FOR WOODY SPECIES NOT ARS 3 OR 5	KING COUNTY BIOLOGISTS (OR OTHER QUALIFIED BIOLOGIST) WILL ASSESS THE SITES TO DETERMINE WHAT CONDITIONS ARE PREVENTING THE PLANTS FROM THRIVING. APPROPRIATE MEASURES WILL BE TAKEN TO CORRECT ANY CONDITIONS THAT ARE LIMITING GROWTH.
S EXCEED PERCENT DLD	IMPLEMENT/REVISE INVASIVE SPECIES CONTROL PLAN.
STANDARDS NOT MET	CONTINUE THE MONITORING REGIME FOR 1 ADDITIONAL YEAR. THE SITES WILL CONTINUE TO BE EVALUATED EVERY YEAR UNTL IT HAS MET THE STATED PERFORMANCE STANDARDS ASSOCIATED WITH MANAGEMENT OBJECTIVES. OTHER CONTINGENCY MEASURES MAY BE IMPLEMENTED DURING THIS PERIOD.

NOTE: THE CONTRACTOR IS RESPONSIBLE FOR THE FIRST YEAR PLANT ESTABLISHMENT AND OTHER ASSOCIATED MAINTENANCE PER WSDOT SPECIFICATIONS, AFTER THE FIRST YEAR THE COUNTY WILL MAKE PROVISIONS TO MAINTAIN THE MITIGATION SITES. THE COUNTY WILL PERFORM THE ANNUAL MONITORING PROGRAM DESCRIBED ON THIS PLAN SHEET TO ASSESS ACHIEVEMENT OF

CITY OF SAMMAMISH APPROVAL				
City Engineer	Date			
Community Development	Date			
community Development	Date			

## **60 % REVIEW SUBMITTAL**

NOT FOR CONSTRUCTION

#### **MITIGATION NOTES**

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SHEET N

LA23