



Wetland and Stream Delineation Report



for

Western Federal Lands Highway Division (WFLHD)

Ridgefield Access Improvement Project



Project Number: 170641

Task Order No.: T-11-009

Project Manager: Don Owings

July 2013



HDR

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Acronyms and Abbreviations

ADA	Americans with Disabilities Act
BNSF	Burlington Northern Santa Fe Railway
CCP	Comprehensive Conservation Plan
Ecology	Washington State Department of Ecology
FHWA	Federal Highway Administration
GPS	global positioning system
HDR	HDR Engineering, Inc.
HGM	hydrogeomorphic
NWR	National Wildlife Refuge
OHWM	Ordinary High Water Mark
USACE	U.S. Army Corps of Engineers
USDA NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish and Wildlife
WDNR	Washington State Department of Natural Resources
WFLHD	Western Federal Land Highway Division
WRIA	Water Resource Inventory Area

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1.0 INTRODUCTION

This report describes the methods and findings of wetland and stream delineations for the Ridgefield Access Improvement project. The report was prepared by HDR Engineering, Inc. (HDR) biologists, and is intended to provide documentation for permitting activities required for the project.

1.1 Background

In cooperation with the U.S. Fish and Wildlife Service (USFWS), the Western Federal Lands Highway Division (WFLHD) of the Federal Highway Administration (FHWA) is proposing to provide for long-term access that improves safety, addresses visitor demand, and meets the operational and management needs of the Ridgefield National Wildlife Refuge Complex. Improvements are planned at the Lake River Bridge in the River "S" Unit and to improve pedestrian access to the Carty Unit (Figure 1).

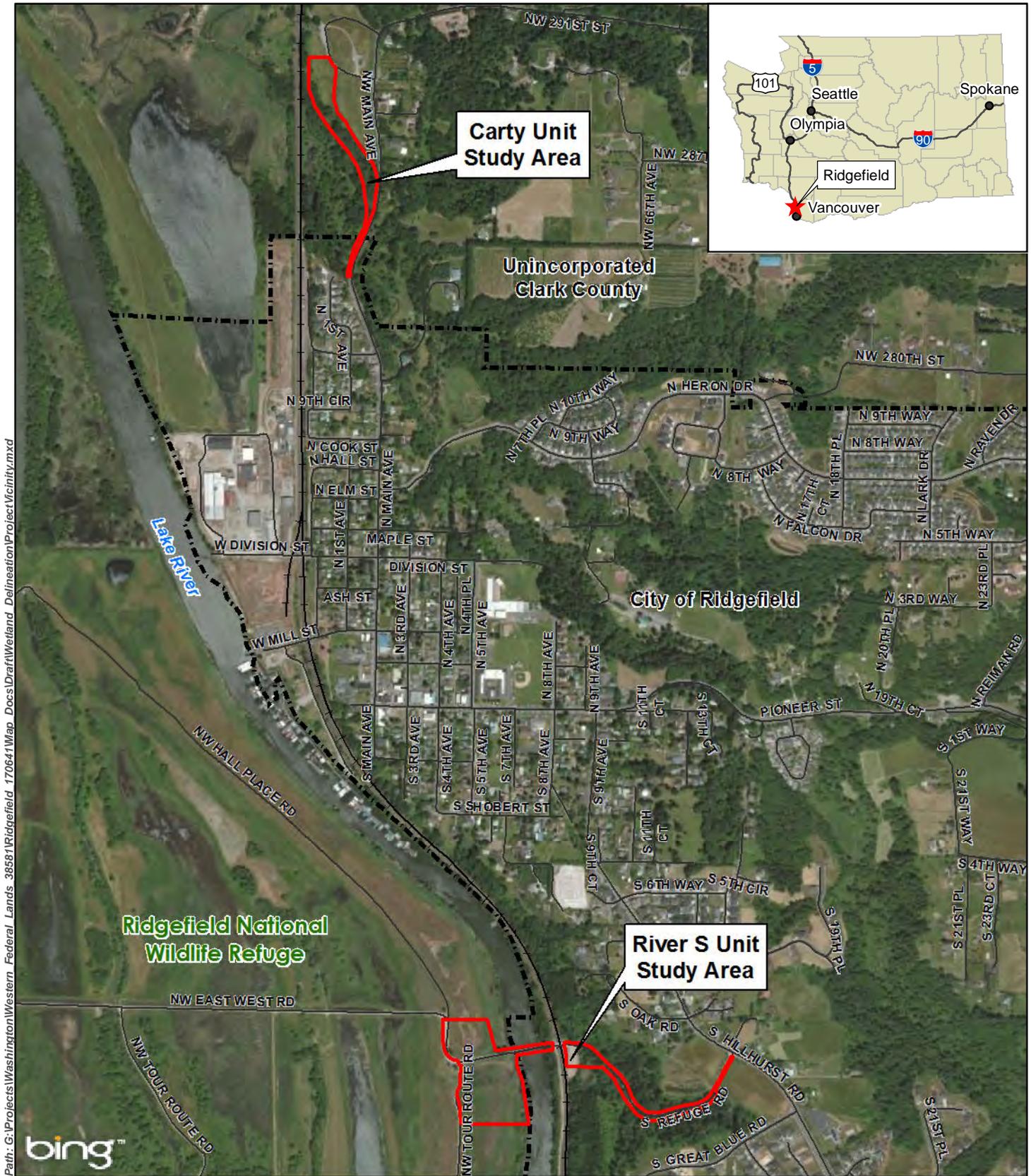
The River "S" Access Improvement project would replace the existing Lake River Bridge, which is a single lane, timber trestle structure, with a 2-lane bridge. The existing single lane bridge is narrow and passage can be difficult for the passenger vehicles and buses accessing the River 'S' Unit. Access to the River 'S' Unit has been closed several times to conduct major repairs to the bridge and to allow heavier equipment to pass without conflicting with passenger vehicles. The proposed project is intended to improve the safety and reliability of public access to and from the River 'S' Unit and improve the USFWS's ability to efficiently carry out their operations consistent with their management goals within the Ridgefield Refuge Complex. The existing pedestrian access from the City of Ridgefield to the Carty Unit is shared along a narrow County roadway. The proposed pedestrian trail would improve safety by creating a separate trail facility and would enhance connectivity between the City of Ridgefield and the Carty Unit including the Refuge Headquarters and other trail facilities. These improvements were proposed as part of management objectives in the Ridgefield National Wildlife Refuge Comprehensive Conservation Plan (2010).

1.2 Project Setting

The project area is located within the City of Ridgefield and in unincorporated Clark County, Washington. The River S Unit is located in Sections 25 and 30, Township 4 North, Range 1 East, and the Carty Unit is located in Sections 13, 44, and 48, Township 4 North, Range 1 West). The project area is located within the Ridgefield NWR land and its adjacent properties (Figure 1).

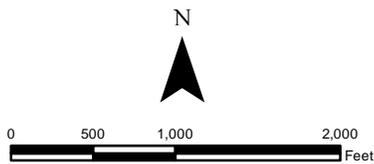
The study area for the River S Unit portion of the project begins at the entrance road to the River S Unit (latitude 45.8073 North and longitude 122.7337 West) and extends west to the pasture area of the River S Unit (latitude 45.8074 North and longitude 122.7405 West). Topography of the site generally slopes down from north to south. Surface elevation in this portion of the project area ranges from 34 feet to 66 feet above mean sea level (Clark County 2010).

The study area for the Carty Unit portion of the project area extends from latitude 45.8255 North and longitude 122.7475 West to latitude 45.8306 North to longitude 122.7486 West. The project starts near the Gee Creek crossing at North Main Avenue and generally extends north near the entrance of the Carty Unit. Topography of the site generally slopes down from east to west. Elevations of the site range from 260 to 20 feet above mean sea level (Clark County, 2010).



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Source: BingMap (2011), Clark County (2010)



2.0 METHODS

2.1 Study Area

There are two study areas established for this project: River S Unit and Carty Unit. The study area for the River S Unit is approximately 14 acres in size. It includes a portion of South Refuge Road and its neighboring areas, the bridge, and the pasture area located between the bridge and gravel entrance road. The Carty Unit study area is approximately 5 acres in size. It includes the proposed access road location and its neighboring areas (Figures 2 and 3). Wetlands and streams outside the study areas were not formally delineated; these areas were assessed based on characteristics visible from public rights-of-way and on information obtained from existing documents and studies, maps, and aerial photographs.

Wetlands and streams were identified through a two-step process. HDR biologists first reviewed existing documents, including soil surveys, wetland and stream inventories, aerial photographs, and other reports that concern wetlands and streams in the project vicinity. After this review, HDR biologists completed a thorough field investigation of the study area that included wetland and stream identification, delineation, and classification.

2.2 Review of Existing Information

- USDA NRCS (2013) Custom Soil Resource Reports for Clark County, Washington.
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Web site (USFWS 2013)
- Washington State Department of Fish and Wildlife (WDFW) Priority Habitat and Species List (WDFW 2013a)
- WDFW (2013b) SalmonScape Web site
- Washington State Department of Natural Resources (WDNR) Natural Heritage Information Request Self-Service System (WDNR 2013a)
- WDNR (2013b) Forest Practice Activity Map
- Ridgefield National Wildlife Refuge Comprehensive Conservation Plan (USFWS 2010)
- Western Federal Lands Highway Division (WFLHD) of Federal Highway Administration (FHWA): Memorandum for the Lake River Bridge: Ridgefield National Wildlife Refuge WA RRP RIDG 100(2) (Berg 2012)

These documents provide background information on the soils, hydrology, land use, and wetlands and streams in the study area.

2.3 Field Investigation

HDR biologists conducted the field investigation on May 29 and 30, 2013. For the month of May 2013, the National Climate Data Center (2013) recorded a total of 4.25 inches of precipitation in Ridgefield, 1.07 inch of which fell in the last week of May. This monthly precipitation total is slightly more than the expected average precipitation for May (2.64 inches, USDA NRCS 2002), and well with the 30 percent minima and maxima

(1.69 inches and 3.18 inches, respectively). As a result, hydrology observed during May 2013 field visits likely represents precipitation within the normal range for this month.

2.3.1 Wetlands

HDR biologists investigated the project site for wetlands using the three parameter methods described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), as updated by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (U.S. Army Corps of Engineers [USACE] 2010). A detailed description of the field methods used in this study is provided in Appendix A.

HDR biologists marked delineated wetlands in the field with sequentially-numbered flagging tape and recorded boundaries and wetland data plot locations with a Trimble Geo XH GPS device. This device is capable of sub-meter accuracy. The resulting data were incorporated into project base maps (Figures 2 and 3).

The City of Ridgefield and Clark County both require that wetlands be rated using the methods described in *Washington State Wetland Rating System for Western Washington – Revised*, Washington State Department of Ecology Publication # 04-06-025 (Hruby 2004). Using this system, wetlands were rated in the field by using the Wetlands Rating Field Data Form provided with the rating system manual (Appendix D). Table 1 lists the rating criteria for the City of Ridgefield and Clark County. A detailed analysis of wetland functions is not included in this report; however, a brief description of wetland functions as part of the general description for each wetland.

Table 1. Wetland Rating System for the City of Ridgefield and Clark County

Regulatory Agency	Category			
	I	II	III	IV
Washington State Department of Ecology ^a	<p>Category I wetlands: Represent a unique or rare wetland type; or Are more sensitive to disturbance than most wetlands; or Are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or Provide a high level of functions. Specific wetlands that meet the Category I criteria include:</p> <ol style="list-style-type: none"> 1. Relatively undisturbed estuarine wetlands over one acre in size; or 2. Natural Heritage Wetlands, specifically, Wetlands identified by the Washington Natural Heritage Program/DNR as high quality relatively undisturbed wetlands; and Wetlands that support state-listed threatened or endangered plants; 3. Bogs; 4. Mature and old-growth forested wetlands over one acre in size; 5. Wetlands in coastal lagoons; and 6. Wetlands that perform many functions very well, as indicated by a score of 70 or more points out of 100 on the wetland rating form. 	<p>Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. Specific wetlands that meet the Category II criteria include:</p> <ol style="list-style-type: none"> 1. Estuarine wetlands less than one acre in size, or disturbed estuarine wetlands larger than one acre; 2. Interdunal wetlands greater than one acre; and 3. Wetlands scoring between 51 and 69 points out of 100 on the wetland rating form. 	<p>Category III wetlands provide a moderate level of functions. Specific wetlands that meet the Category III criteria include:</p> <ol style="list-style-type: none"> 1. Wetlands scoring between 30 and 50 points out of 100 on the wetland rating form; and 2. Interdunal wetlands between 0.1 acre and 1.0 acre in size. 	<p>Category IV wetlands have the lowest levels of functions and are heavily disturbed. Specific wetlands that meet the Category IV criteria include:</p> <ol style="list-style-type: none"> 1. Wetlands scoring less than 30 points out of 100 on the wetland rating form.
City of Ridgefield ^b	<p>Category I wetlands: Wetlands identified by the Washington Natural Heritage Program/DNR as high quality relatively undisturbed wetlands; or wetlands that support state-listed threatened or endangered plants;</p> <ol style="list-style-type: none"> 1. Bogs larger than ½ acre; 2. Mature and old-growth forested wetlands over one acre in size ; 3. Wetlands that perform many functions well, as indicated by a score of 70 or more points out of 100 on the Ecology rating system. 	<p>Category II wetlands:</p> <ol style="list-style-type: none"> 1. Bogs between ¼ and ½ acre in size; 2. Wetlands with a moderately high level of functions, as indicated by scoring 51 to 69 in the rating system 	<p>Category III wetlands:</p> <ol style="list-style-type: none"> 1. Wetlands with a moderate level of functions, as indicated by scoring 30 to 50 in the rating system 	<p>Category IV wetlands:</p> <ol style="list-style-type: none"> 2. Wetlands with a low level of functions, as indicated by scoring less than 30 in the rating system
Clark County ^c	<p>Category I wetlands: Wetlands identified by the Washington Natural Heritage Program/DNR as high quality relatively undisturbed wetlands; or wetlands that support state-listed threatened or endangered plants;</p> <ol style="list-style-type: none"> 1. Bogs larger than ½ acre; 2. Mature and old-growth forested wetlands over one acre in size, as defined by WDFW PHS provisions; 3. Wetlands that perform many functions well, as indicated by a score of 70 or more points out of 100 on the Ecology rating system. 	<p>Category II wetlands:</p> <ol style="list-style-type: none"> 1. Wetlands identified by DNR as containing sensitive plant species; 2. Bogs between ¼ and ½ acre in size; 3. Wetlands with a moderately high level of functions, as indicated by scoring 51 to 69 in the rating system 	<p>Category III wetlands:</p> <ol style="list-style-type: none"> 3. Wetlands with a moderate level of functions, as indicated by scoring 30 to 50 in the rating system 	<p>Category IV wetlands:</p> <ol style="list-style-type: none"> 4. Wetlands with a low level of functions, as indicated by scoring less than 30 in the rating system

^a Hruby (2004)

^b City of Ridgefield Municipal Code (18.280.150);

^c Clark County Ordinance (Chapter 40.450.020)

2.3.2 Streams

The ordinary high water marks (OHWM) of streams in the study area were determined per the definitions in WAC 173-22-030. HDR biologists marked OHWM of all streams in the study area with the Trimble Geo XH GPS device, except for the Lake River. The Lake River is not included as part of this study since the OHWM for Lake River has been already determined in a previous study.

Streams identified in the study areas were classified according to local ordinance requirements. The City of Ridgefield and Clark County both use the final stream typing system identified in WAC 222-16-030. Streams within the study areas were assigned a type based on the stream typing system (WAC 222-16-030). Criteria for this typing system are described in Table 2. The stream types described in this report are based on the stream reaches within the study area; downstream reaches may be rated higher.

Table 2. Summary of the Water Typing System

Stream Type	Definition ^a
S	All waters, within their bankfull width, as inventoried as "shorelines of the state" under chapter 90.58 RCW and the rules promulgated pursuant to chapter 90.58 RCW including periodically inundated areas of their associated wetlands
F	All segments of natural waters that are not Type S waters, and that contain fish or fish habitat, including: 1) waters diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility, 2) waters diverted for use by a federal, state, or tribal fish hatchery from the point of diversion for 1,500 feet or the entire tributary if the tributary is highly significant for protection of downstream water quality; 3) waters which are within a federal, state, local, or private campground having more than 10 camping units; or 4) riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat.
Np	All segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow.
Ns	All segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.

^a Definitions are summarized from WAC 222-16-030

3.0 RESULTS

3.1 Wetlands within the Study Area

HDR biologists identified four wetlands within the combined study areas. Wetlands were distinguished from adjoining uplands by the presence of indicators for wetland hydrology, hydric soils, and hydrophytic vegetation. Wetland delineation data sheets are provided in Appendix B, and photographs are provided in Appendix C. Figure 2 and Figure 3 show the locations of wetlands, streams, and data plots, and Table 3 summarizes the size, rating, and classification of wetlands found within the study area. Detailed descriptions of each wetland within the study area are provided in the following sections.

Table 3. Wetland Size, Rating, and Classification for Wetlands in the Study Area

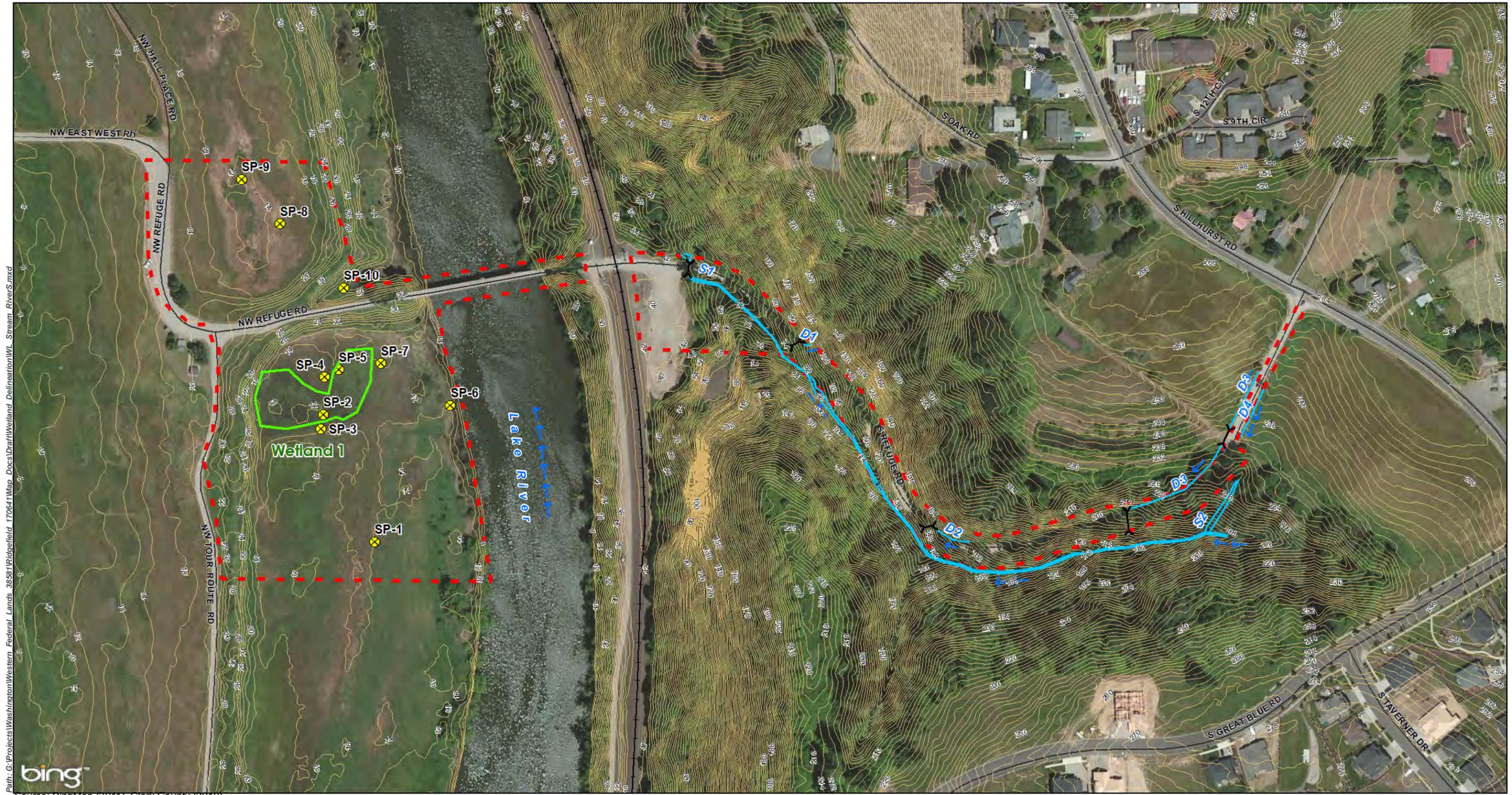
Wetland Name	Delineated Area within Study Area (Overall Wetland Size) ^a (acres)	Regulatory Agency	Study Area Unit	Wetland Rating ^b	Hydrogeomorphic (HGM) Classification	Cowardin Classification ^c	Dominant Species Observed within Wetland
1	0.6 (0.6)	USACE, Ecology, Clark County	River S	III	Depressional	PEM1	Reed canarygrass, common spike-rush
2	0.03 (0.04)	USACE, Ecology, Clark County	Carty	IV	Slope	PFO1/PEM1	Red alder, lady fern, and skunk cabbage
3	0.01. (0.01)	USACE, Ecology, Clark County	Carty	III	Depressional	PEM1	Slough sedge, nootka rose, black cottonwood (saplings)
4	0.003 (0.003)	USACE, Ecology, City of Ridgefield	Carty	III	Riverine	PEM1	Reed canarygrass

a Overall wetland size is the total area of wetland delineated or estimated based on aerial photograph interpretation and field reconnaissance. Area of delineated portions of the wetlands is based on the survey data.

b Wetland ratings are based on Washington State Wetland Rating System for Western Washington – Revised, Washington State Department of Ecology Publication # 04-06-025 (Hruby 2004)

c Cowardin et al. (1979). All wetlands are palustrine.

PFO1 = palustrine forested, broad-leaved deciduous; PEM1 = palustrine emergent, persistent



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Source: BingMap (2011), Clark County (2010)



- Legend**
- ⊗ Sample Plot Location
 - - - Study Area
 - Wetland Boundary
 - Waterway
 - Flow
 - 2-foot Contour
 - Street
 - + Railroad
 - Culvert

Figure 2
Wetlands and Streams within the
River S Study Unit

3.1.1 Wetland 1

Palustrine emergent

Category III

0.6 acre in Study Area/0.6 acre overall

Wetland 1 is a depressional wetland located approximately 100 feet south of the gravel access road and 150 feet west of the Lake River in the River S Unit (Figure 2). Wetland 1 is approximately 130 feet wide and 250 feet long located in a topographic depression, approximately 10 feet lower in elevation from the access road. No outlets or surface water inflows were observed in Wetland 1 during the field investigation.

Wetland 1 is a palustrine emergent wetland (Cowardin et al. 1979) and is primarily dominated by field meadow foxtail (*Alopecurus pratensis*), reed canarygrass (*Phalaris arundinacea*), and common spike-rush (*Eleocharis palustris*). The presence of these species meets the wetland vegetation criteria. According to the NWI map (USFWS 2013), Wetland 1 is shown as a freshwater emergent wetland (PEM1C) (Figure 4).

Soils in Wetland 1 are mapped as Sauvie silty clay loam, 0 to 8 percent slopes (USDA NRCS 2013) (Figure 5). The typical soil profile observed within 20 inches of the soil surface consists of dark grayish brown (10YR 4/2) clay loam with redoximorphic features over at least 7 inches of dark gray (10YR 4/1) clay loam with redoximorphic features or grayish brown (10YR 5/2) clay loam with redoximorphic features. The soils in Wetland 1 meet the hydric soil indicators for Depleted Matrix.

Primary indicators of hydrology include seeping water present at 7 inches below the surface and saturated soils at 11 inches below the surface. No surface water was observed at the sample plot locations. Saturation in the upper 12 inches of the soil profile and a shallow water table meet the wetland hydrology criteria.

Wetland 1 is rated as Category III in the Washington State Department of Ecology (Ecology) rating system (see Table 1), with moderate scores for water quality (20/32 points) and hydrologic functions (14/32 points), and a low score for habitat function (12/36 points). Wetland 1 has moderate potential to provide water quality functions and hydrologic functions because Wetland 1 has potential to trap sediments and pollutants due to absence of an outlet and presence of ungrazed vegetation. The proximity of the gravel access road to the north provides opportunity for this wetland to provide water quality and hydrologic functions. Wetland 1 has limited potential due to lack of habitat diversity but has some opportunities to provide habitat functions because it has connectivity to other habitat types.

3.1.2 Wetland 2

Palustrine forested/emergent Category IV

0.03 acre in Study Area/0.04 acre overall

Wetland 2 is a slope wetland located near the western boundary of the Carty unit study area, approximate 200 feet east of Gee Creek (Figure 3). It is located on a gently-sloped hillside that slopes down from the upland forested area to the east. Within the study area, Wetland 2 is approximately 40 feet wide and 60 feet long.

Wetland 2 consists of palustrine forested and emergent habitat types (Cowardin et al. 1979). The forest community in Wetland 1 includes red alder (*Alnus rubra*) with an understory of beaked hazelnut (*Corylus cornuta*) and red elderberry (*Sambucus racemosa*). The emergent community in Wetland 1 is dominated by lady fern (*Athyrium filix-femina*), skunk cabbage (*Lysichiton americanus*), and Bolander's sedge (*Carex bolanderi*). The presence of these species meets the wetland vegetation criteria. An upland island is also located in the middle of Wetland 2 that is dominated by snowberry (*Symphoricarpos albus*), red elderberry, sword fern (*Polystichum munitum*), lady fern, and trailing blackberry (*Rubus ursinus*). According to the NWI map (USFWS 2013), Wetland 2 and its proximity are shown as a freshwater emergent wetland (PEM1S) (Figure 4).

Soils in Wetland 2 are mapped as Gee silt loam, 0 to 8 percent slopes (USDA NRCS 2013) (Figure 5). The observed soils in Wetland 2 consist of 6 inches of very dark gray (10YR 3/1) loam over 7 inches of dark greenish gray (5GY 4/1) loam and at least 7 inches of light olive brown (2.5Y 5/3) loam. No redoximorphic features were observed within the soil profile. A sulfidic odor was also noted within 6 inches of the soil surface. The soils in Wetland 2 meet the hydric soil indicators for Hydrogen Sulfide and Loamy Gleyed Matrix.

Primary indicators of hydrology include surface water present near the sample plot location, saturated soils, and free water present at the surface. The presence of surface saturation and a water table at the surface of the soil profile meet the wetland hydrology criterion.

Wetland 2 is rated as a Category IV wetland in the Ecology rating system, with low scores for water quality (4/24 points) and hydrologic functions (5/16 points), and moderate for habitat functions (20/36 points). Wetland 2 has low potential and no opportunities to provide water quality function due to its steeply-sloped configuration and absence of pollutant source nearby. Wetland 2 has some potential to provide hydrologic function because it has some dense vegetation and small surface depressions. Wetland 2 also has some potential and opportunity to provide habitat functions because it has habitat diversity and connectivity to other habitat types.

3.1.3 Wetland 3

Palustrine emergent

Category III

0.01 acre near Study Area/0.01 acre overall

Wetland 3 is a depressional wetland located approximately 70 feet west of North Main Avenue and approximately 260 feet east of Gee Creek (Figure 3). Wetland 3 is approximately 12 feet wide and 15 feet long within the study area located in a topographic depression. No outlets or surface water inflows were observed in Wetland 3 during the field investigation. According to the NWI map (2013), no wetlands are mapped in this area.

Wetland 3 is a palustrine emergent wetland that is dominated by slough sedge (*Carex obnupta*) and reed canarygrass. One Oregon ash (*Fraxinus latifolia*) tree, black cottonwood (*Populus balsamifera*) saplings and clustered rose (*Rosa pisocarpa*) are also present within the wetland. The presence of these species meets the wetland vegetation criteria.

Primary indicators of hydrology include surface water present near the sample plot location, saturated soils, and free water present at the surface. The presence of surface saturation and a water table at the surface of the soil profile meet the wetland hydrology criteria. This wetland is not noted on the NWI map (USFWS 2013) (Figure 4).

Soils in Wetland 3 are mapped as Sauvie silt loam, 0 to 3 percent slopes (USDA NRCS 2013) (Figure 5). The observed soils in Wetland 3 consist of 6 inches of organic layer over 9 inches of dark grayish brown (10YR 4/2) silty loam and at least 17 inches of (10YR 4/2) silty loam with redoximorphic features. The soils in Wetland 3 meet the hydric soil indicators for Depleted Matrix.

Wetland 3 is rated as a Category III wetland in the Ecology rating system, with moderate scores for water quality (12/32 points) and habitat functions (17/32 points), and a low score for hydrologic function (7/36 points). Wetland 3 has moderate potential to provide water quality function because Wetland 3 lacks an outlet, has persistent ungrazed vegetation, and contains an organic layer within the top 6 inches of the soil profile. Wetland 3 also has some potential to provide hydrologic functions because it lacks an outlet and has a smaller contributing basin. Wetland 3 does not provide opportunities for water quality and hydrologic functions. Wetland 3 has limited habitat functions due to low habitat diversity and interspersions, but has some connections to other habitat types located nearby.

3.1.4 Wetland 4

Palustrine emergent

Category III

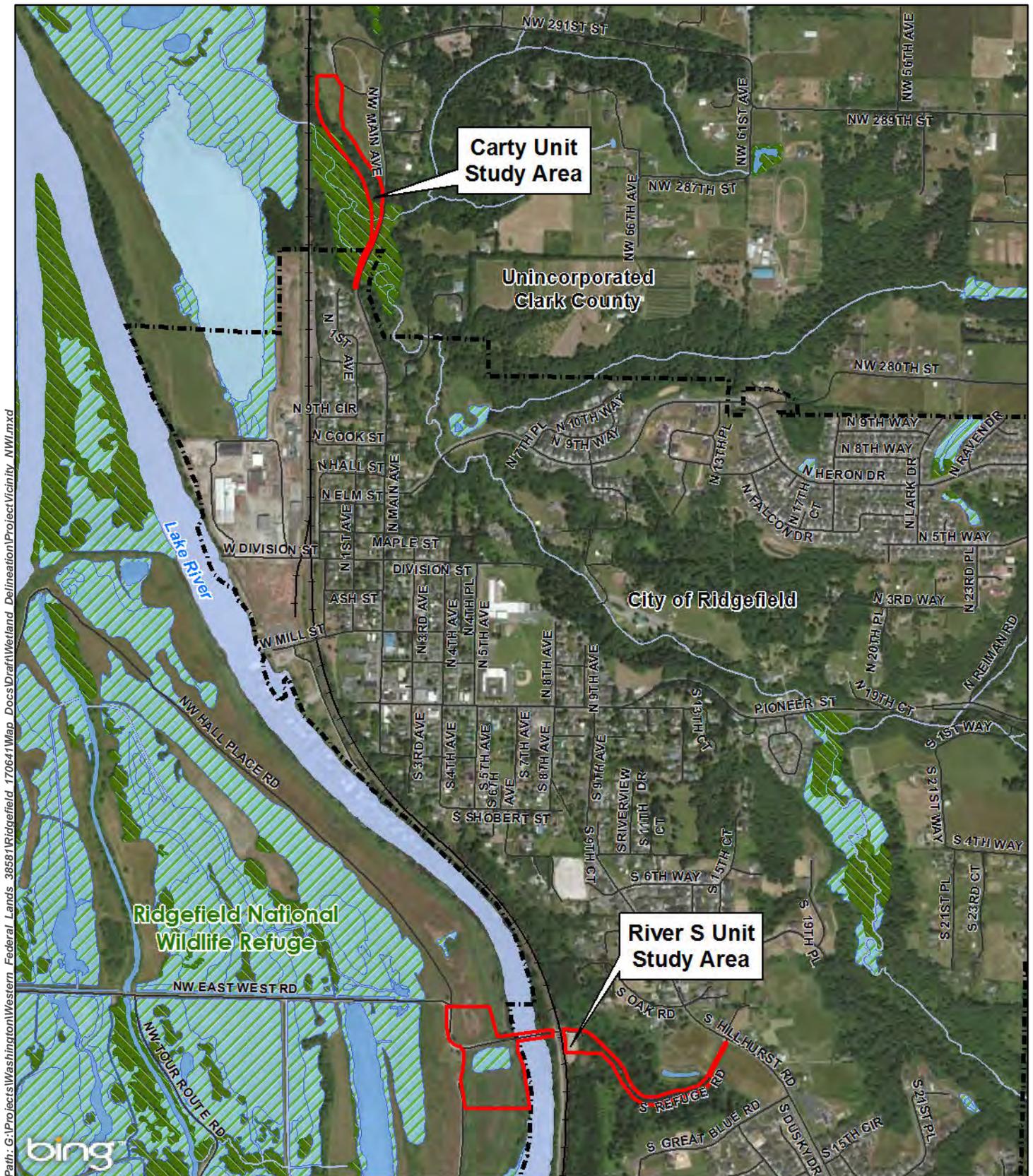
0.003 acre in Study Area/0.003 acre overall

Wetland 4 is a riverine wetland located along Stream 8, a tributary to Gee Creek (Figure 3). It is approximately 10 feet wide and 15 feet long located at a toe of slope from the road fill of North Main Avenue. According to the NWI map (2013), no wetlands are mapped in this area. Wetland 4 is a palustrine emergent wetland (Cowardin et al. 1979) primarily dominated by reed canarygrass. Field bindweed (*Convolvulus arvensis*), spotted touch-me-not (*Impatiens capensis*), climbing nightshade (*Solanum dulcamara*), and fragrant bedstraw (*Galium triflorum*) are also present in smaller quantities. The presence of these species meets the wetland vegetation criteria.

Primary indicators of hydrology include saturated soils present at 8 inches below the surface and free water at 10 inches below the surface. Primary sources of hydrology for Wetland 4 appear to be from S3 and runoff from the road adjacent to the wetland. The presence of saturated soil and a water table within 12 inches of the soil profile meet the wetland hydrology criteria. This wetland is not noted on the NWI map (USFWS 2013) (Figure 4).

Soils in Wetland 4 are mapped as Sauvie silt loam, 0 to 3 percent slopes (USDA NRCS 2013) (Figure 5). The observed soils in Wetland 4 consist of 10 inches of very dark grayish brown (10YR 3/2) silt loam over at least 6 inches of dark gray (2.5Y 4/1) silt loam. Redoximorphic features were observed throughout the soil profile. The soils in Wetland 4 meet the hydric soil indicators for Depleted Matrix.

Wetland 4 is rated as a Category III wetland in the Ecology rating system, with moderate scores for water quality (20/32 points), hydrologic (14/32 points), and habitat (14/36 points) functions. Wetland 4 has some potential to provide water quality and hydrologic functions because it can trap sediments and pollutants. Surrounding urban land use also provides opportunity for Wetland 4 to perform some water quality and hydrologic functions. Wetland 4 has limited habitat functions due to low habitat diversity and interspersion, but has some connections to other habitat types nearby.



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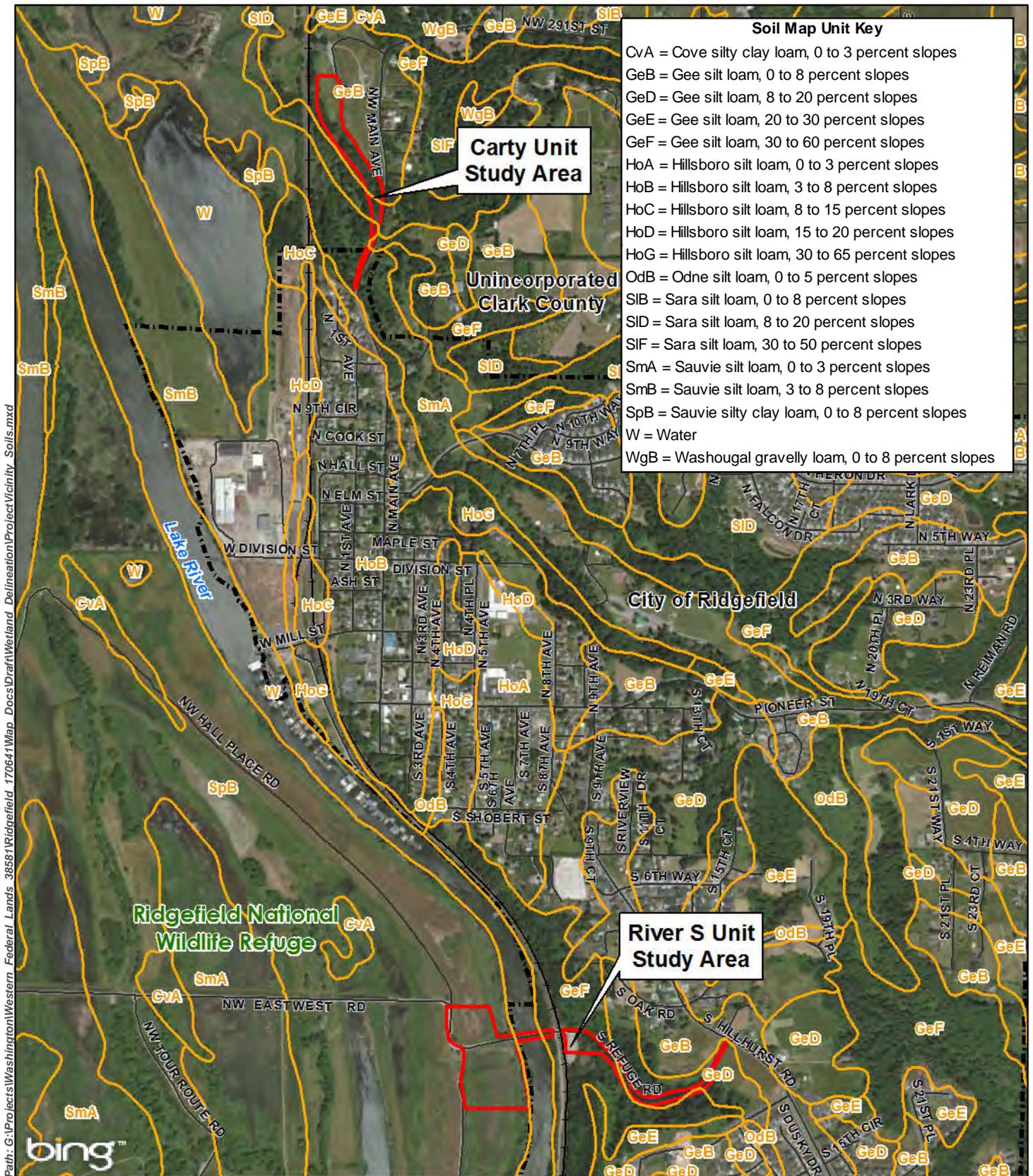
Source: BingMap (2011), Clark County (2010), NWI (2013).

Legend

- Study Area
- Railroad
- City Limit
- Street
- Freshwater Pond
- Riverine
- Lake
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland

Figure 4
NWI Wetland Map





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Source: BingMap (2011), Clark County (2010), NRCS (2012).

Legend

- Study Area
- Railroad
- City Limit
- Soil Map Unit
- Street

Figure 5
Soils Survey Map



3.2 Streams and Ditches in the Study Area

3.2.1 Streams

The study area includes two Water Resource Inventory Areas (WRIAs): Lewis Watershed (WRIA 27) and Salmon-Washougal Watershed (WRIA 28). Two streams and four ditches are located in the River S study area, and two streams and one ditch are located in the Carty Unit study area. Based on the field observations, four streams are considered jurisdictional waters to the USACE, Ecology, Clark County, and City of Ridgefield: Gee Creek, S1, S2, and S3. The remaining waters do not have a hydrologic connection to other waters or wetlands and would not be jurisdictional. Table 4 summarizes the size, rating, and classification of streams and ditches found in the study area (Figure 2 and Figure 3). Photographs of these streams are provided in Appendix C.

Table 4. Summary of Streams in the Study Area

Stream Name	Study Area Unit	Tributary to	Stream Type	USACE Jurisdiction	Local Jurisdiction	Average Width in Study Area (ft)	Approximate Length in Study Area (ft)
Gee Creek	Carty	Columbia River	F	RPW	City of Ridgefield	40	60
S1	River S	Lake River	Np	RPW	City of Ridgefield	3	3,000
S2	River S	S1	Ns	Non-RPW	City of Ridgefield	3	130
S3	Carty	Gee Creek	F	RPW	City of Ridgefield	20	220
D1	River S	S1	N/A	Non-RPW	City of Ridgefield	1	25
D2	River S	S1	N/A	Non-RPW	City of Ridgefield	1	90
D3	River S	S1	N/A	Non-RPW	City of Ridgefield	2	400
D4	River S	None	N/A	Non-RPW	City of Ridgefield	1	110
D5	Carty	None	N/A	Non-RPW	Clark County	1	150

^b RPW = Relatively Permanent Water

^c Average widths and approximate lengths were determined based on existing survey data and field observations.

Gee Creek

Gee Creek is a perennial stream that is a tributary of the Columbia River, and its basin encompasses approximately 12,000 acres in size (FWS 2010). Gee Creek is located at the south end of the Carty Unit study area. Gee Creek flows west within the study area, and it continues to extend north for approximately 4,000 feet, eventually discharging into Columbia River floodplain in the Ridgefield Wildlife Refuge. Within the study area, Gee Creek is approximately 40 to 50 feet wide at bankfull width, and the channel substrate appears to be silt or clay. Both banks appear to be incised and are dominated by Himalayan blackberry, reed canarygrass, and black hawthorn (*Crataegus douglasii*). According to the Salmonscape mapping (WDFW 2013b), presence of Coho, chum, and

steelhead is assumed in Gee Creek within the study area. Based on the WDNR stream typing (2013b) and WDFW Salmonscape mapping (2013b), Gee Creek is rated as a fish-bearing stream (Type F).

S1

S1 is a perennial stream located along South Refuge Road. S1 flows westward for approximately 600 feet and then northwestward for approximately 750 feet until it crosses South Refuge Road just east of the BNSF railroad. S1 eventually drains into Lake River north of the South Refuge Road outside of the study area. Within the River S study area, S1 is approximately 2 to 3 feet wide at bankfull width and less than one foot deep. The channel substrate is predominantly cobbles and gravels ranging from 3 to 12 inches in size. A few seeps that lack bed and bank and wetland characteristics were also observed along S1, primarily on the right bank of S1, discharging into S1.

Riparian vegetation in the study area primarily consists of western red cedar (*Thuja plicata*), big-leaf maple (*Acer macrophyllum*), and red alder with an understory of salmonberry (*Rubus spectabilis*), Himalayan blackberry (*Rubus armeniacus*), sword fern, snowberry, vine maple (*Acer circinatum*), twinberry (*Lonicera involucrata*), creeping buttercup (*Ranunculus repens*), piggy-back plant (*Tolmiea menziesii*), field horsetail (*Equisetum arvense*), lady fern, and tall managrace (*Glyceria elata*). No fish species are documented to occur in S1 (WDFW 2013b); however, Chinook and Coho salmon and steelhead are documented to be present in Lake River. Based on the WDNR stream typing (2013b) and field observation, S1 is rated as a non-fish-bearing, perennial stream (Type Np).

S2

S2 is an ephemeral stream located south of South Refuge Road. Bed and banks are present; however, no gravel substrates and no surface water were observed during the field investigation. S2 slopes southwestward for approximately 130 feet and enters S1 outside of the study area. Pacific waterleaf (*Hydrophyllum tenuipes*), lady fern, salmonberry, sword fern, and piggy-back plant were growing in the channel. S2 is approximately 3 to 4 feet wide and about 1 foot deep. No fish are documented to occur in S2 (WDFW 2013b). Because there is no surface water present and vegetation growing in channel, S2 is rated as a non-fish, seasonal stream (Type Ns).

S3

S3 is a tributary to Gee Creek located at the south end of the Carty Unit study area. S3 appears to be a backwater side channel of Gee Creek that is approximately 15 to 20 feet wide and 200 feet long. Near the confluence of Gee Creek, the channel gets narrower (approximately 1-foot-wide) and drains into Gee Creek. No flow was observed during the field investigation, and water appears to be stagnant throughout. Dominant vegetation observed on both banks includes reed canarygrass, Himalayan blackberry, Oregon ash, and black hawthorn. No fish are documented to occur in S3 (WDFW 2013b) likely due to the absence of fish habitat upstream. However, because there are no barriers located in S3, the stream is rated as a perennial fish-bearing stream (Type F).

3.2.2 Ditches

D1

D1 is a ditch located north side of South Refuge Road originating from the hill slope, approximately 10 feet higher from the road. It flows down on a steep hillside and then flows westward along the road until it crosses the road via a culvert. Downstream of the culvert, no channel is present, and water likely dissipates into the steep slope. D1 is approximately 1-foot wide. No cobbles and gravels are present in the channel. Vegetation along the ditch consists of salmonberry, lady fern, stinging nettle (*Urtica dioica*), and Pacific waterleaf.

D2

D2 is also a ditch located on the north side of South Refuge Road originating from hill slope, approximately 4 to 5 feet higher from the road. Similar to D1, D2 flows down on a hill slope and then flows westward along the road until it crosses the road via a culvert. The channel is approximately 1-foot wide and less than 1-foot deep. Within the channel, approximately 4 to 6 inch gravels are present. Overstory vegetation along the channel consists of snowberry, Himalayan blackberry, stinging nettle, and creeping buttercup. No surface water connection between D2 and S1 were observed during the field investigation.

D3

D3 is a roadside ditch located at the eastern end of the River S study area and north side of South Refuge Road. D3 flows southwestward for approximately 130 feet and flows under the gravel road through a culvert and continues to flow for another 270 feet until it crosses back across the road via another culvert. Similar to D2, no channel is present downstream of the last culvert, and water likely dissipates into the steep slope. No surface water was observed downstream of the culvert. D3 is approximately 1-to-2-foot wide and less than 6-inch deep. Gravels that are 2 to 4 inch in size are present within the channel. Vegetation along D3 is dominated by Himalayan blackberry, thimbleberry (*Rubus parviflorus*), sword fern, trailing blackberry, and piggy-back plant.

D4

D4 is also a roadside ditch located at the eastern end of the River S study area on the other side of D3. D4 is approximately 1-foot wide and flows southwestward for approximately 110 feet and drains into an area with riprap, and no flow was observed downstream from the riprap area. Vegetation along D4 is dominated by common dandelion (*Taraxacum officinale*), white clover (*Trifolium repens*), meadow foxtail, and bird's-foot trefoil (*Lotus corniculatus*).

D5

D5 is a roadside ditch located along North Main Avenue flowing southward for approximately 150 feet within the Carty Unit study area. D5 is approximately 1-foot wide and is mostly vegetated with reed canarygrass. No gravel substrates were observed during the field investigation. D5 is not connected to an above-ground channel system or wetlands.

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Appendix A

Wetland Delineation Methodology

Wetlands are defined as areas saturated or inundated by surface or groundwater at a frequency and duration sufficient to support, and which under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. The methods used to delineate the on-site wetlands conform to methods described in the *Washington State Wetland Identification and Delineation Manual* (Ecology 1997), the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010).

To be considered a wetland, an area must have hydrophytic vegetation, hydric soils, and wetland hydrology. HDR staff collected data on these parameters in areas representative of typical site conditions. Staff collected additional data in associated uplands, as needed, to confirm wetland and stream boundaries. Wetland boundaries and wetland data plot locations in the study area were marked with sequentially-numbered flagging. All delineated wetlands were instrument-surveyed and mapped on project base maps.

Vegetation

The dominant plants and their wetland indicator status were evaluated to determine if the vegetation was hydrophytic. To determine which plants were dominant at a sample plot biologists applied the 50/20 rule per Corps recommendations. Under this guidance absolute cover estimates were made for each species found rooted within the sample plot, for each vegetative strata found in the habitat (tree, sapling/shrub, herb, and woody vine). The species that had the most cover was included along with the next species until the absolute cover of these totaled more than 50% of the total absolute cover. Any other species that represented at least 20% of the total absolute cover was also included as a dominant species for that vegetative stratum.

Sample plots varied in size depending on site topography and habitat complexity. The objective of establishing a plot was to depict particular plant associations that reflect specific water regimes or other ecological factors. So, on steep-sided riparian areas, a plot may consist of a narrow strip along the water's edge or within a floodplain a plot may be a standard 30-foot circle.

Hydrophytic vegetation is defined as vegetation adapted to wetland conditions. To meet the hydrophytic vegetation criterion, more than 50% of the dominant plants in each stratum must be Facultative, Facultative Wetland, or Obligate, based on the wetland indicator category assigned to each plant species by the Corps (NWPL of the US Army Corps of Engineers, Cold Regions Research and Engineering Laboratory, Remote Sensing and Geographic Information System (<http://www.crrel.usace.army.mil/>)). Table A-1 lists the definitions of the indicator categories.

Table A-1. Definitions of Wetland Plant Indicator Categories used to Determine the Presence of Hydrophytic Vegetation

Wetland Indicator Category	Symbol	Definition
Obligate Wetland Plants	OBL	Plants that almost always (> 99% of the time) occur in wetlands, but which may rarely (< 1% of the time) occur in non-wetlands.
Facultative Wetland Plants	FACW	Plants that often (67 to 99% of the time) occurs in wetlands, but sometimes (1 to 33% of the time) occur in non-wetlands.
Facultative Plants	FAC	Plants with a similar likelihood (34 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.

Source: Lichvar (2012).

HDR biologists identified plants to species in the field and estimated percent cover of dominant plants. Scientific and common plant names follow currently accepted nomenclature. Most names are consistent with *Flora of the Pacific Northwest* (Hitchcock and Cronquist 1973) and the PLANTS Database (USDA NRCS 2013). During the field investigation, staff observed and recorded the dominant plant species on data sheets for each data plot.

Soils

Generally, an area must contain hydric soils to be 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 part (12 inches). Biological activities in saturated soil result in reduced oxygen concentrations and organisms turn to 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 soil matrix, and bright-colored redoximorphic features form within the matrix. Other important hydric soil indicators include organic matter accumulations in the surface horizon, reduced sulfur odors, and organic matter staining in the subsurface (USDA NRCS 2010).

HDR staff examined soils by excavating sample pits to a depth of 20 inches to observe soil profiles, colors, and textures. In some case, a shallower soil pit was adequate to document hydric soil indicators. Munsell color charts (Munsell Color 2010) were used to describe soil colors.

Hydrology

Project staff examined the area for evidence of hydrology. Wetland hydrology criteria were considered to be satisfied if it appeared that the soil was seasonally inundated or saturated to the surface for a consecutive number of days greater than or equal to 12.5% of the growing

season. The growing season for the area was determined based on the period in which temperatures are above 28 degrees Fahrenheit 5 out of 10 years (Ecology 1997) using the long-term climatological data collected by the U.S. Department of Agriculture Natural Resource Conservation Service (USDA NRCS) (2002). Using the USDA NRCS (2002) WETS table for the nearest station (Vancouver, Washington), the growing season was approximated to be typically between March 30 and November 9, or a total of 224 days.

Wetland hydrology indicators are divided into two categories – primary and secondary indicators (USACE 2010). Primary indicators of hydrology include surface inundation, high water table, and saturated soils. The presence of one primary indicator is sufficient to conclude that wetland hydrology is present. If the absence of a primary indicator, observation of two or more secondary indicators is required to conclude that wetland hydrology is present. Secondary indicators of hydrology include drainage patterns, water-stained leaves, and geomorphic setting (USACE 2010).

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Appendix B
Wetland Data Sheets

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield/Clark Sampling Date: SP1
 Applicant/Owner: FHA WFL HD State: WA Sampling Point: SP 5/20/13
 Investigator(s): L.O./MD Section, Township, Range: S3D/T4N/R1E
 Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: 46.805916 Long: -122.741521 Datum: WGS84
 Soil Map Unit Name: Sauvie silty clay loam 0-80% slopes NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
= Total Cover					
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____					
= Total Cover					
Herb Stratum (Plot size: _____) 1. <u>LOTUS COENICULATUS</u> <u>20</u> <u>N</u> <u>FAC</u> 2. <u>VICIA BATHUA</u> <u>10</u> <u>N</u> <u>UPL</u> 3. <u>ALOPECURUS PRATENSIS</u> <u>65</u> <u>Y</u> <u>FAC</u> 4. <u>POA PRATENSIS</u> <u>5</u> <u>N</u> <u>FAC</u> 5. <u>ANTHO ODOR</u> <u>T</u> <u>N</u> <u>FACU</u> 6. <u>VICIA HIRSUTA</u> <u>15</u> <u>N</u> <u>UPL</u> 7. <u>CIRSIMUM ADV</u> <u>T</u> <u>N</u> <u>FAC</u> 8. _____ 9. _____ 10. _____ 11. _____					
= Total Cover					
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - 5 - Wetland Non-Vascular Plants¹
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield/clack Sampling Date: 5/29/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP2
 Investigator(s): LC/MP Section, Township, Range: S30/T4N/R1E
 Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: 45.906556 Long: -122.741984 Datum: _____
 Soil Map Unit Name: sauvie silty clay loam 0-8% slopes NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.) _____
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) _____

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>ALDROEUROS PRATENSIS</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>PHAR ARUND</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	
3. <u>ELBO PALV</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>105</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____				
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum <u>10</u>				
Remarks:				

SOIL

Sampling Point: SP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-13	10YR 4/2	90	7.5YR 5/6	10	C	M	CL	
13-20	10YR 4/1	87	7.5YR 3/4	10	C	M	CL	CHARCOAL PRESENT (<1)%
			7.5YR 5/6	3	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>13</u>	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>11</u>	

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

Remarks:

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

Project/Site: Ridgetfield River S Unit City/County: Ridgetfield Sampling Date: 5/29/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP3
 Investigator(s): LC/MD Section, Township, Range: S30/T4N/R1E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): ~2%
 Subregion (LRR): A Lat: 49.80649 Long: -122.74201 Datum: WGS84
 Soil Map Unit Name: Sauvie silty clay loam 0-8% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Alopecurus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. <u>Loiseleuria</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. <u>Vicia sativa</u>	<u>7</u>	<u>N</u>	<u>UPL</u>	
5. <u>Cirsium</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
6. <u>Ranunculus acris</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
7. <u>Dipsacus fullonum</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
8. <u>Leucanthemum vulgare</u>	<u>3</u>	<u>N</u>	<u>FACU</u>	
9. _____	_____	_____	_____	
10. <u>Anthoxanthum</u>	<u>3</u>	<u>N</u>	<u>FACU</u>	
11. <u>PHAR</u>	<u>3</u>	<u>N</u>	<u>FACW</u>	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield/Clark Sampling Date: 5/29/13
 Applicant/Owner: FHA WELHD State: WA Sampling Point: SP24
 Investigator(s): LC/MD Section, Township, Range: S30/T4N/R1E
 Landform (hillslope; terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR): A Lat: 45.806776 Long: -122.74982 Datum: WGS84
 Soil Map Unit Name: Sandier silty clay loam 0-8% slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)	
4. _____					
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)					
1. _____				Prevalence Index worksheet:	
2. _____				Total % Cover of: _____	Multiply by: _____
3. _____				OBL species <u>0</u> x 1 = <u>0</u>	
4. _____				FACW species <u>0</u> x 2 = <u>0</u>	
5. _____				FAC species <u>65</u> x 3 = <u>195</u>	
_____ = Total Cover				FACU species _____ x 4 = _____	
Herb Stratum (Plot size: _____)					
1. <u>HALDRE-CORUSIPRA</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	UPL species <u>45</u> x 5 = <u>225</u>	
2. <u>VICIA BIATIVA</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	Column Totals: <u>110</u> (A) <u>420</u> (B)	
3. <u>VICIA HIRSUTA</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	Prevalence Index = B/A = <u>3.8</u>	
4. <u>LOTUS CORN</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
5. <u>PARENTADELLIA VISCOSA</u>	<u>17</u>	<u>N</u>	<u>FAC</u>	1 - Rapid Test for Hydrophytic Vegetation	
6. <u>POA PRATENSIS</u>	<u>7</u>	<u>N</u>	<u>FAC</u>	2 - Dominance Test is >50%	
7. <u>GERANIUM DISSECTUM</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	3 - Prevalence Index is ≤3.0 ¹	
8. <u>CORONILLA SP.</u>	<u>7</u>	<u>N</u>	<u>UPL</u>	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9. <u>ELYSIMACHIA NUMMULARIA</u>	<u>7</u>	<u>N</u>	<u>FACW</u>	5 - Wetland Non-Vascular Plants ¹	
10. _____				Problematic Hydrophytic Vegetation ¹ (Explain)	
11. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<u>110</u> = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
2. _____					
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

Creeping Fern

SOIL

Sampling Point: SP4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 4/2	95	7.5YR 4/6	5	C	M	CL	
12-21	10YR 4/2	98	7.5YR 3/4	2	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield Sampling Date: 5-29-13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP-5
 Investigator(s): LC/MD Section, Township, Range: S30/T4N/R1E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): A Lat: 45.806824 Long: -122.741863 Datum: WGS84
 Soil Map Unit Name: Sauvie silty clay loam, 0-8% slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				OBL species <u> </u> x 1 = <u> </u>
1. _____	_____	_____	_____	FACW species <u> </u> x 2 = <u> </u>
2. _____	_____	_____	_____	FAC species <u> </u> x 3 = <u> </u>
3. _____	_____	_____	_____	FACU species <u> </u> x 4 = <u> </u>
4. _____	_____	_____	_____	UPL species <u> </u> x 5 = <u> </u>
5. _____	_____	_____	_____	Column Totals: <u> </u> (A) <u> </u> (B)
= Total Cover				Prevalence Index = B/A = <u> </u>
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Alopecurus pr</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
2. <u>PHR</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Persicaria lapathifolia</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. <u>Lythrum machia num</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
5. <u>Eleocharis palu</u>	<u>10</u>	<u>N</u>	<u>DBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: 93

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 5/10	95	2.5YR 4/4	5	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): see page 17
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield State: WA Sampling Date: 5/29/13
 Applicant/Owner: FHWA/WFLHD Sampling Point: SP6
 Investigator(s): LC/MD Section, Township, Range: S30/T1N/R1E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): _____
 Subregion (LRR): A Lat: 45.806633 Long: -122.5740912 Datum: WGS84
 Soil Map Unit Name: Saurik silty clay loam Unit, 0-8% slope NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
4. _____				= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				= Total Cover	
1. <u>unn. Baptisia spp.</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	Prevalence Index worksheet:	
2. _____				Total % Cover of: _____	Multiply by: _____
3. _____				OBL species _____ x 1 = _____	
4. _____				FACW species _____ x 2 = _____	
5. _____				FAC species _____ x 3 = _____	
= Total Cover				FACU species _____ x 4 = _____	
= Total Cover				UPL species _____ x 5 = _____	
= Total Cover				Column Totals: _____ (A)	_____ (B)
= Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				= Total Cover	
1. <u>PHAR ARUN</u>	<u>100</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
2. <u>Alopecurus PRAT</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	1 - Rapid Test for Hydrophytic Vegetation	
3. <u>EQU ARV</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
4. _____				3 - Prevalence Index is ≤3.0 ¹	
5. _____				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
6. _____				5 - Wetland Non-Vascular Plants ¹	
7. _____				Problematic Hydrophytic Vegetation ¹ (Explain)	
8. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____					
10. _____					
11. _____					
= Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: SP6

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
<u>SAME AS SP 3/4</u>								
<u>0-20</u>	<u>10YR 4/2</u>	<u>95</u>	<u>7.5YR 3/4</u>	<u>5</u>	<u>C</u>	<u>M</u>	<u>Sil</u>	<u><10" mix of charcoal in the soil</u>

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Secondary Indicators (2 or more required)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

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

5/29/13

Project/Site: Ridgefield River S Unit City/County: Ridgefield Sampling Date: 5/29/13
 Applicant/Owner: FHWA WFL HD State: WA Sampling Point: SP7
 Investigator(s): LC/MD Section, Township, Range: S30/T4N/R1E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): A Lat: 45.806867 Long: -122.741509 Datum: WGS84
 Soil Map Unit Name: Same silty clay loam 0-8% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Hydric Soil Present? Yes _____ No _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
_____ = Total Cover	_____	_____	_____	
Sapling/Shrub Stratum (Plot size: _____)	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
1. _____	_____	_____	_____	OBL species _____ x 1 = _____
2. _____	_____	_____	_____	FACW species _____ x 2 = _____
3. _____	_____	_____	_____	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	_____	_____	_____	UPL species _____ x 5 = _____
_____ = Total Cover	_____	_____	_____	Column Totals: _____ (A) _____ (B)
Herb Stratum (Plot size: _____)	_____	_____	_____	Prevalence Index = B/A = _____
1. <u>RHAR</u>	<u>47</u>	<u>X</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators:
2. <u>ALPR</u>	<u>50</u>	<u>X</u>	<u>FAC</u>	
3. <u>LoCO</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover	<u>100</u>	_____	_____	1 - Rapid Test for Hydrophytic Vegetation _____
Woody Vine Stratum (Plot size: _____)	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
1. _____	_____	_____	_____	3 - Prevalence Index is ≤3.0 ¹ _____
2. _____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____
_____ = Total Cover	_____	_____	_____	5 - Wetland Non-Vascular Plants ¹ _____
Bare Ground in Herb Stratum _____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain) _____
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

SOIL

Sampling Point: SP 7

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 9/2	97	10YR 9/4	3				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required: check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield/Clark Sampling Date: 5/29/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP8
 Investigator(s): LC/MD Section, Township, Range: 530/T4N/R1E
 Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: 45.907673 Long: -122.942399 Datum: WGS84
 Soil Map Unit Name: Sauvie silty clay loam D-8% slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>66%</u> (A/B)
4. _____	_____	_____	_____	= Total Cover	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____	
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)	
Herb Stratum (Plot size: _____) 1. <u>ALOP. PRAI</u> <u>5</u> <u>N</u> <u>FAC</u> 2. <u>HOLCUS LANA</u> <u>25</u> <u>Y</u> <u>FAC</u> 3. <u>CIRSEUM ARVENSE</u> <u>7</u> <u>N</u> <u>FAC</u> 4. <u>BROMUS HORDEACEUS</u> <u>40</u> <u>Y</u> <u>FACU</u> 5. <u>PARENTIACELLA VISCOSA</u> <u>7</u> <u>N</u> <u>FAC</u> 6. <u>FESTUCA RUBRA</u> <u>50</u> <u>Y</u> <u>FAC</u> 7. <u>LOTUS CORN</u> <u>5</u> <u>N</u> <u>FAC</u> 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: SP 8

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 4/2		7.5YR 4 3/4	2	C	M	SiL	
11-19	10YR 4/2		7.5YR 4 3/4	5	C	M	SiL	CHARCOAL PRESENT <1% AT 15-19" SECTION

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

Secondary Indicators (2 or more required)

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

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

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield Sampling Date: 5/29/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP-9
 Investigator(s): LC/MD Section, Township, Range: S30/T4N/R1E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): A Lat: 45.807928 Long: -122.74293 Datum: NAD83
 Soil Map Unit Name: Sauvie silty clay loam 0-8% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
_____ = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Per. patens</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Alopecurus pratensis</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Festuca rubra</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Cirsium arvense</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
<u>102</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ 5 - Wetland Non-Vascular Plants¹
 ___ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: SP9

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	97	10YR 4/6	3	C	M	S, CL	
12-16	10YR 3/1	97	10YR 3/6	3	C	M	S, CL	
16-20	10YR 4/2	95	10YR 3/6	5	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
<u>Primary Indicators (minimum of one required; check all that apply)</u>	<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: Ridgefield River S Unit City/County: Ridgefield Sampling Date: 5/29/13
 Applicant/Owner: FHA WFHLD State: WA Sampling Point: SF0
 Investigator(s): LC/MD Section, Township, Range: S30/T4N/R1E
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): ~2%
 Subregion (LRR): A Lat: 45.809306 Long: -122.74184 Datum: NAD83
 Soil Map Unit Name: Saville silty clay loam 0-8% slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			

Remarks: _____

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)	
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1. <u>QUERCUS GIBBERNA</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>		
2. <u>CORYLUS CORNUTA</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	OBL species _____ x 1 = _____	
3. <u>POP BALS</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
<u>15</u> = Total Cover				UPL species _____ x 5 = _____	
				Column Totals: _____ (A) _____ (B)	
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>6'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1. <u>VIOLA PRAL</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>		
2. <u>VIOLA PRAL</u>	<u>20</u>	<u>N</u>	<u>UPL</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3. <u>LOTUS CORN</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	_____ 3 - Prevalence Index is ≤3.0 ¹	
4. <u>CAREX PACHYSTACHYA</u>	<u>7</u>	<u>N</u>	<u>FAC</u>	_____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. <u>POA PRATENSIS</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	_____ 5 - Wetland Non-Vascular Plants ¹	
6. <u>VIOLA SATIVA</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
7. <u>GALLIUM APA</u>	<u>7</u>	<u>N</u>	<u>FACU</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>125</u> = Total Cover					
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks: <u>SAPLINGS LOCATED DOWNSLOPE OF PLOT</u>					

SOIL

Sampling Point: S P 10

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/2	100					SicL	
6-21	10YR 4/2	95	10YR 4/4	5	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: Ridgefield Carty Unit City/County: Ridgefield/Clark Co Sampling Date: 5/30/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP 11
 Investigator(s): LC/MD Section, Township, Range: S44/T4N/R1W
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): None Slope (%): 5%
 Subregion (LRR): A Lat: 45.830053 Long: -122.748646 Datum: WGS84
 Soil Map Unit Name: Gee silt loam 0-8% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>PRA LAT</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>POOR</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>TRAP</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. <u>ANOP</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
3. <u>ALOP PRA</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. <u>EDAR</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u>Daisy Stiparia</u>	<u>2</u>	<u>N</u>	<u>OBL</u>	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹
6. <u>Carex bolanderi</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
7. <u>JUEF</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. <u>Poa sp.</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
9. <u>Vicia sp.</u>	<u>2</u>	<u>N</u>	<u>UPL</u>	
10. <u>PRAF</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
11. <u>Juncus acuminatus</u>	<u>3</u>	<u>N</u>	<u>OBL</u>	
<u>118</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: SP11

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	99	7.5YR 3/4	1	C	PL	SiL	
6-18	10YR 3/2	97	7.5YR 3/4	2	C	M	SiL	
			10YR 3/4	1	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

- Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**
- | | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | |
| | | |
| | | |
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

- Wetland Hydrology Indicators:**
- | | | |
|---|---|--|
| Primary Indicators (minimum of one required; check all that apply) | | Secondary Indicators (2 or more required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____

Water Table Present? Yes _____ No Depth (inches): 18"

Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): 19"

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: Ridgefield Army unit City/County: Ridgefield Sampling Date: 5/30/13
 Applicant/Owner: FHA WPLHD State: WA Sampling Point: SP12
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 3%
 Subregion (LRR): A Lat: 45.828431 Long: -122.947382 Datum: WGS84
 Soil Map Unit Name: Gec silty loam 0-8% slope NWI classification: PFO/PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>ALRU</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2. <u>ACMB</u>	<u>12</u>	<u>Y</u>	<u></u>	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. <u></u>	<u></u>	<u></u>	<u></u>	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>60</u> (A/B)
4. <u></u>	<u></u>	<u></u>	<u></u>	Prevalence Index worksheet:	
<u>30</u> = Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species	x 1 = _____
1. <u>SARA</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	FACW species	x 2 = _____
2. <u>COCC</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	FAC species	x 3 = _____
3. <u>SYAR - out</u>	<u></u>	<u></u>	<u></u>	FACU species	x 4 = _____
4. <u></u>	<u></u>	<u></u>	<u></u>	UPL species	x 5 = _____
5. <u></u>	<u></u>	<u></u>	<u></u>	Column Totals:	(A) _____ (B) _____
<u>10</u> = Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>LYAM</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>ATFI</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3. <u>Gerrardia robertianum</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4. <u>Carex bolanderi</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. <u></u>	<u></u>	<u></u>	<u></u>	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
6. <u></u>	<u></u>	<u></u>	<u></u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
7. <u></u>	<u></u>	<u></u>	<u></u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. <u></u>	<u></u>	<u></u>	<u></u>		
9. <u></u>	<u></u>	<u></u>	<u></u>		
10. <u></u>	<u></u>	<u></u>	<u></u>		
11. <u></u>	<u></u>	<u></u>	<u></u>		
<u>85</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot size: _____)					
1. <u></u>	<u></u>	<u></u>	<u></u>		
2. <u></u>	<u></u>	<u></u>	<u></u>		
<u>15</u> = Total Cover					
% Bare Ground in Herb Stratum <u>15</u>					
Remarks: <u>ACMA growing outside of the WL, rooted out from the SP location</u>					

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

Project/Site: Ridgefield Carty Unit City/County: Ridgefield/Clark Co Sampling Date: 5/30/13
 Applicant/Owner: FHA WFLHP State: WA Sampling Point: SP13
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): SLOPE Local relief (concave, convex, none): CONCAVE Slope (%): 3%
 Subregion (LRR): A Lat: 45.828453 Long: -122.747411 Datum: NAD83
 Soil Map Unit Name: Gle silty loam 0-8% slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>ALN RUB</u>	90	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	2 (A)
2. _____				Total Number of Dominant Species Across All Strata:	4 (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	50% (A/B)
4. _____	90	= Total Cover			
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. <u>SYM ALB</u>	40	Y	FACW	Total % Cover of:	Multiply by:
2. <u>SAM (RAC?)</u>	T	N	FACW	OBL species _____ x 1 = _____	
3. _____				FACW species _____ x 2 = _____	
4. _____				FAC species <u>100</u> x 3 = <u>300</u>	
5. _____				FACW species <u>60</u> x 4 = <u>240</u>	
	40	= Total Cover		UPL species _____ x 5 = _____	
Herb Stratum (Plot size: _____)				Column Totals:	<u>160</u> (A) <u>540</u> (B)
1. <u>POL MUN</u>	5	N	FACW	Prevalence Index = B/A = <u>3.375</u>	
2. <u>ATH FEIN</u>	10	Y	FAC	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
3. <u>RUB URSON</u>	15	Y	FACW		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	30	= Total Cover			
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
1. _____					
2. _____					
				_____ = Total Cover	
% Bare Ground in Herb Stratum _____					
Remarks: <u>PLOT AREA RESTRICTED TO UPLAND AREA - MICRO HUMIC AREA</u>					

SOIL

Sampling Point: SP13

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

Depth (inches)	Matrix		Redox Features			Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%					
0-10	10YR 2.5/1		10YR 3/1	1		C	M	S:L	
10-16	10YR 3/2		2.5Y 3/1	15		D	M	S:L	
			10YR 3/4	5		C	M	S	
16-19	10YR 4/6		2.5Y 3/1	5		D	M	SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

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

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 16
 Saturation Present? Yes No Depth (inches): 14
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks: HYDROLOGY MARGINAL.

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

Project/Site: Ridgetfield Party Unit City/County: Ridgetfield/Clark Co Sampling Date: 5/30/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: 314
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): None Slope (%): ~2%
 Subregion (LRR): A Lat: 45.828395 Long: -122.747294 Datum: WGS84
 Soil Map Unit Name: clay silt loam 30-50% slope NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks: <u>sp ~ 7-8' higher than SPIZ meter.</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>ACMA</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (AVB)
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>60</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>COCO</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>SYAL</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Ilex aquifolium</u>	<u>5</u>	<u>N</u>		
4. _____				
5. _____				
<u>40</u> = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>POMV</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Geranium foli</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>	
3. <u>Galium aparine</u>	<u>3</u>	<u>N</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>18</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. <u>RUCK</u>	<u>10</u>	<u>Y</u>		
2. <u>HERE</u>	<u>5</u>	<u>N</u>		
<u>15</u> = Total Cover				
% Bare Ground in Herb Stratum <u>67</u>				
Remarks: _____				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

SOIL

Sampling Point: SP14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-7	10YR 2.5/1	100				Cil		
7-10	10YR 3/2 10YR 4/3	90 10	10YR 4/3	≠	≠	≠	S.L	MIXED MATRIX
10-21	10YR 4/3	100				Sil		
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 Soils³:		
<input type="checkbox"/> Histosol (A1)		<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> 2 cm Muck (A10)				
<input type="checkbox"/> Histic Epipedon (A2)		<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Red Parent Material (TF2)				
<input type="checkbox"/> Black Histic (A3)		<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)				
<input type="checkbox"/> Hydrogen Sulfide (A4)		<input type="checkbox"/> Loamy Gleyed Matrix (F2)		<input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)		<input type="checkbox"/> Depleted Matrix (F3)						
<input type="checkbox"/> Thick Dark Surface (A12)		<input type="checkbox"/> Redox Dark Surface (F6)						
<input type="checkbox"/> Sandy Mucky Mineral (S1)		<input type="checkbox"/> Depleted Dark Surface (F7)						
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Redox Depressions (F8)						
Restrictive Layer (if present): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks: _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____		
Remarks: _____		

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

Project/Site: Ridgefield Cnty Unit City/County: Ridgefield Clackco Sampling Date: 5/30/13
 Applicant/Owner: FHA WFLAD State: WA Sampling Point: SP15
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): CONVEX Slope (%): 0
 Subregion (LRR): A Lat: 45.827091 Long: -122.746907 Datum: WGS84
 Soil Map Unit Name: SMA - Saville silt loam, 0-3% slopes NWI classification: P2M/P33
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>FRCA</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)	
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)					
1. <u>POBA (sap)</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
2. <u>KOJA NPIS</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
3. _____					
4. _____					
5. _____					
_____ = Total Cover					
Herb Stratum (Plot size: _____)					
1. <u>CAOB</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>		
2. <u>PHAR</u>	<u>3</u>	<u>N</u>	<u>FACW</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
_____ = Total Cover					
Woody Vine Stratum (Plot size: <u>149</u>)					
1. _____					
2. _____					
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>47</u>					
_____ = Total Cover					
Remarks: <u>Trees growing outside of wetland</u>					

SOIL

Sampling Point: SP15

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	organic layer							
6-9	10YR 4/2	100					SIL	
9-26	10YR 4/2	97	10YR 4/6	3	C	M	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

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

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

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

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

Field Observations:

Surface Water Present? Yes No Depth (inches): 1"
 Water Table Present? Yes No Depth (inches): surface
 Saturation Present? Yes No Depth (inches): surface

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: Ridgefield Carty Unit City/County: Ridgefield/Clark Co Sampling Date: 5/30/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP16
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): FLOODPLAIN Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: 45.82907 Long: -122.746892 Datum: WGS84
 Soil Map Unit Name: Sm A - Saurie silt loam, 0-3% slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>FRA LAT</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2. <u>POP BAL</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>60%</u> (A/B)
4. _____				Prevalence Index worksheet:	
	<u>90</u>			Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species	x 1 = _____
1. <u>ROS PIS</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	FACW species	x 2 = _____
2. _____				FAC species	x 3 = _____
3. _____				FACU species	x 4 = _____
4. _____				UPL species	x 5 = _____
5. _____				Column Totals:	(A) _____ (B) _____
	<u>15</u>			Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>PAL MUN</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
2. <u>GALLIUM oqa</u>	<u>T</u>	<u>N</u>	<u>FACW</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
3. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	<u>5</u>				
Woody Vine Stratum (Plot size: _____)					
1. <u>KUB ARM</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>		
2. _____					
	<u>40</u>				
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: SP16

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-10	10YR 3/2	100				SL	SIL	
10-20	10YR 3/3	99	7.5YR 4/3	1	C	PL	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

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

Project/Site: Ridgefield Carty Unit City/County: Ridgefield/Clark Co Sampling Date: 6/30/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP17
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): TOE OF SLOPE Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: 45.827466 Long: -122.74685 Datum: WGS84
 Soil Map Unit Name: SARA silt loam, 30-50% slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>FRA LAT</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>5</u> (A)
2. <u>ALN RUB</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata:	<u>6</u> (B)
3. <u>POP BAL</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>83%</u> (A/B)
4. _____				Prevalence Index worksheet:	
<u>80</u> = Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species	x 1 = _____
1. <u>ROSA NUT</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	FACW species	x 2 = _____
2. <u>COR COR</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	FAC species	x 3 = _____
3. _____				FACU species	x 4 = _____
4. _____				UPL species	x 5 = _____
5. _____				Column Totals:	(A) _____ (B) _____
<u>20</u> = Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>RUBUS WYS</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
2. <u>CAREX OBNUPTA</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
3. <u>VERONICA AMERICANA</u>	<u>10</u>	<u>N</u>	<u>OBL</u>		
4. <u>RAN REP</u>	<u>T</u>	<u>N</u>	<u>FAC</u>		
5. <u>CAREX INFIRMIPERUA</u>	<u>T</u>	<u>N</u>	<u>FAC</u>		
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>60</u> = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: SP17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100					S ₁ L	
8-15	10YR 3/2	89	7.5YR 3/4	2			S ₁ L	
	10YR 4/3	10						Sandy pockets
15-23	10YR 2.5/2	98	7.5YR 3/4	2			S ₁ L	
	10YR 2.5/2	10						MIXED MATRIX
23-27	10YR 4/2	80	7.5YR 3/4	10			S ₁ L	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)	
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>27</u>		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

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

Project/Site: Ridgefield Carty Unit City/County: Ridgefield/Clark Co Sampling Date: 5/30/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP18
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): HILLSLOPE Local relief (concave, convex, none): CONCAVE Slope (%): 5
 Subregion (LRR): K Lat: 45.829466 Long: -122.746793 Datum: WGS84
 Soil Map Unit Name: Sara silt loam, 30-50% slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>QUE GAR</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. <u>FRA LAT</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3. <u>ALN RUB</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33 1/3</u> (A/B)	
4. _____					
			<u>85</u> = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1. <u>ACE MAC (SKP)</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	Total % Cover of: _____	Multiply by: _____
2. <u>FRA LAT (SKP)</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	OBL species _____ x 1 = _____	
3. <u>SYM ALB</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	FACW species _____ x 2 = _____	
4. <u>COR COR</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	FAC species _____ x 3 = _____	
5. _____				FACU species _____ x 4 = _____	
			<u>30</u> = Total Cover	UPL species _____ x 5 = _____	
				Column Totals: _____ (A)	_____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1. <u>POL MUN</u>	<u>45</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
2. <u>CAR INFIRMIVERIA</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
3. <u>Tellimaqua grandiflora</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
			<u>65</u> = Total Cover		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1. <u>RUB AKN</u>	<u>15</u>			Yes _____	No <input checked="" type="checkbox"/>
2. _____					
			<u>15</u> = Total Cover		
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: SP18

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100					Sil	SP
6-16	10YR 3/2	99	7.5YR 4/3	1	C	M	Sil	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

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

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): _____

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: Ridgefield Cnty Unit City/County: Ridgefield/Clark Sampling Date: 5-30-13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP19
 Investigator(s): LC/MD Section, Township, Range: S 13/T4N/R1W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): A Lat: 45.82664 Long: -122.747143 Datum: WGS84
 Soil Map Unit Name: SuA - Scovie silt loam, 0-3% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Notes
Tree Stratum (Plot size: _____)				
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>COCO</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>RUAR</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
3. <u>POBA (sap)</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Fragula purshiana</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
<u>35</u> = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>PHAR</u>	<u>90</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Cir aru</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	
3. <u>Galium tri</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>95</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation _____

2 - Dominance Test is >50% _____

3 - Prevalence Index is ≤3.0¹ _____

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) _____

5 - Wetland Non-Vascular Plants¹ _____

Problematic Hydrophytic Vegetation¹ (Explain) _____

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: SP19

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 4/3	100					SIL	
12-17	10YR 4/2	93	10YR 4/6	2	C	M	L	
17-22	10YR 5/2	94	7.5YR 4/6	3	C	M	L	
	10YR 3/1	3						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Ridgefield Carty Unit City/County: Ridgefield Sampling Date: 5/30/13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP20
 Investigator(s): LC/MD Section, Township, Range: S48/T4N/R1W
 Landform (hillslope, terrace, etc.): FLOODPLAIN Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: 45.826159 Long: -122.747233 Datum: WGS84
 Soil Map Unit Name: Smt - Savie silt loam 0-3% slope NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>PHAR</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Conium maculatum</u>	<u>T</u>	<u>N</u>	<u>UPL</u>	
3. <u>Impatiens capensis</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. <u>Solanum dulcamara</u>	<u>T</u>	<u>N</u>	<u>FAC</u>	
5. <u>GALLUM tri</u>	<u>T</u>	<u>N</u>	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>105</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: <u>CANOPY IS FRAGILE - 25% BUT NOT ROOTED IN WETLAND SO NOT INCLUDED IN CALS</u>				

SOIL

Sampling Point: SP20

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 3/2	98	5YR 3/4	2			S, L	
7-10	10YR 3/2	85	#5YR 3/4 2.5Y 4/1	10 5			S, L	
10-16	2.5Y 4/1	85	5YR 3/4	15			S, L	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

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

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 10
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 8

Wetland Hydrology Present? Yes No

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

Remarks: SURFACE WATER 5 FT FROM PLOT # 16" DEEP

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

Project/Site: Ridgefield Carty Unit City/County: Ridgefield/Clark Sampling Date: 5-30-13
 Applicant/Owner: FHA WFLHD State: WA Sampling Point: SP21
 Investigator(s): LC/MD Section, Township, Range: S13/T4N/R1W
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 20%
 Subregion (LRR): A Lat: 45.82616 Long: -122.747217 Datum: WGS84
 Soil Map Unit Name: S1A - Savvie silt loam, 0-3% slope NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>sp ~ 3' away from sp20 but ~ 3' higher in elevation</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>RVAR</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>10</u> = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>PHAR</u>	<u>85</u>	<u>Y</u>	<u>FACW</u>	
2. <u>URFI</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
3. <u>Poa pra</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Conv on</u>	<u>3</u>	<u>N</u>	<u>UPL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>95</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: _____				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species <u>85</u>	x 2 = <u>170</u>
FAC species <u>7</u>	x 3 = <u>21</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>3</u>	x 5 = <u>15</u>
Column Totals: <u>105</u> (A)	<u>246</u> (B)
Prevalence Index = B/A = <u>2.34</u>	

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants¹

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Appendix C

Wetland and Stream Photographs

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Photo 1. Wetland 1 facing north from Sample Plot 2



Photo 2. Sample Plot 2 in Wetland 1



Photo 3. Sample Plot 3



Photo 4. Pasture area near Sample Plot 8



Photo 5. Pasture area at the north end of the Carty Unit study area facing north, near Sample Plot 11



Photo 6. Wetland 2 facing north near Sample Plot 12



Photo 7. Sample Plot 12 in Wetland 2



Photo 8. Sample Plot 14



Photo 9. Upland forested area near Sample Plot 14 facing west



Photo 10. Wetland 3 facing south near Sample Plot 15



Photo 11. Sample Plot 15 in Wetland 3



Photo 12. Upland area facing south from Sample Plot 19



Photo 13. Wetland 4 near Sample Plot 20 facing south



Photo 14. Lake River facing east from the north side of the bridge



Photo 15. Substrate of S1



Photo 16. S1 near the confluence of S2



Photo 17. S2 facing downstream towards S1



Photo 18. Gee Creek facing downstream from the right bank near the bridge crossing



Photo 19. S3 facing downstream from the end of the stream channel



Photo 20. D1 facing downstream along Wildlife Refuge Road



Photo 21. D1 outfall on the south side of Wildlife Refuge Road



Photo 22. D2 facing downstream along Wildlife Refuge Road



Photo 23. D2 outfall on the south side of Wildlife Refuge Road



Photo 24. D3 facing upstream towards the Ridgefield NWR entrance



Photo 25. D3 outfall on the north side of Wildlife Refuge Road



Photo 26. D4 along Wildlife Refuge Road facing northeast



Photo 27. D5 along Main Street facing north

Appendix D
Ecology Rating Forms

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Wetland name or number 1

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): 1 Date of site visit: 5/29/13

Rated by M. Dalzell Trained by Ecology? Yes No Date of training March 2016

SEC: 30 TOWNSHIP: 4N RANGE: 1E Is S/T/R in Appendix D? Yes No

Map of wetland unit: Figure 2 Estimated size 20.6ac

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I II III IV

Category I = Score ≥ 70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions

20
14
12
46

Score for Hydrologic Functions

Score for Habitat Functions

TOTAL score for Functions

Category based on SPECIAL CHARACTERISTICS of wetland

I II Does not Apply

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

III

Summary of basic information about the wetland unit

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

Wetland name or number 1

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
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 into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

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

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

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

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

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
 NO - go to 3 YES - The wetland class is **Flats** *w/ 13 flat but has groundwater*

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

3. Does the entire wetland unit **meet both** of the following criteria?
 The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
 At least 30% of the open water area is deeper than 6.6 ft (2 m)?
 NO - go to 4 YES - The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?
 The wetland is on a slope (*slope can be very gradual*),
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
 The water leaves the wetland **without being impounded**?
 NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*

- NO - go to 5 YES - The wetland class is **Slope**

Wetland name or number 1

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

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

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

go to 6 **YES** – The wetland class is **Riverine**

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

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

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

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 using the class that represents more than 90% of the total area.

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

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

Wetland name or number 1

D Depressional and Flats Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	<p>D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing</p>	Figure <u>3</u>
D	<p>S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0</p>	<u>0</u>
D	<p>D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation >= 95% of area points = 5 Wetland has persistent, ungrazed, vegetation >= 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation >= 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes</p>	Figure <u>5</u>
D	<p>D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</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 Area seasonally ponded is < 1/4 total area of wetland points = 0 Map of Hydroperiods</p>	Figure <u>2</u>
D	Total for D 1 <i>Add the points in the boxes above</i>	<u>10</u>
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?	(see p. 44)
D	<p>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i></p> <ul style="list-style-type: none"> — Grazing in the wetland or within 150 ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <i>gravel dirt road ~ 80' away from wetland</i> — 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 _____ <p>YES multiplier is 2 NO multiplier is 1</p>	multiplier <u>2</u>
D	TOTAL - Water Quality Functions <i>Multiply the score from D1 by D2</i> <i>Add score to table on p. 1</i>	<u>20</u>

D Depressional and Flats Wetlands		Points (only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation		
D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		(see p.46)
D	<p>D 3.1 Characteristics of surface water flows out of the wetland unit</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 4</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>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</p> <p><i>(if ditch is not permanently flowing treat unit as "intermittently flowing")</i></p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</p>	4
D	<p>D 3.2 Depth of storage during wet periods</p> <p><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></p> <p>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7</p> <p>The wetland is a "headwater" wetland points = 5</p> <p>Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5</p> <p>Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3</p> <p>Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1</p> <p>Marks of ponding less than 0.5 ft <i>Unit is relatively flat</i> points = 0</p>	0
D	<p>D 3.3 Contribution of wetland unit to storage in the watershed</p> <p><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></p> <p>The area of the basin is less than 10 times the area of unit points = 5</p> <p>The area of the basin is 10 to 100 times the area of the unit points = 3</p> <p>The area of the basin is more than 100 times the area of the unit points = 0</p> <p>Entire unit is in the FLATS class points = 5</p>	3
D	Total for D 3	7
<i>Add the points in the boxes above</i>		
D	<p>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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.</p> <p><i>Note which of the following indicators of opportunity apply.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <p><i>dike located landward of the wetland indicates the river floods periodically</i></p> <p>YES multiplier is 2 NO multiplier is 1</p>	multiplier 2
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	14
<i>Add score to table on p. 1</i>		

These questions apply to wetlands of all HGM classes.

Points
(only 1 score per box)

HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat

H 1. Does the wetland unit have the potential to provide habitat for many species?

H 1.1 Vegetation structure (see p. 72)

Check the types of vegetation classes present (as 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
- 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 structures that qualify. If you have:

	4 structures or more	points = 4
	3 structures	points = 2
	2 structures	points = 1
	1 structure	points = 0
Map of Cowardin vegetation classes		

Figure 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
- Seasonally flooded or inundated
- Occasionally flooded or inundated
- Saturated only
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake-fringe wetland = 2 points**
- Freshwater tidal wetland = 2 points**

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

Map of hydroperiods

Figure 1

H 1.3. Richness of Plant Species (see p. 75)

Count the number of plant species in the wetland that cover at least 10 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, purple loosestrife, Canadian Thistle

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

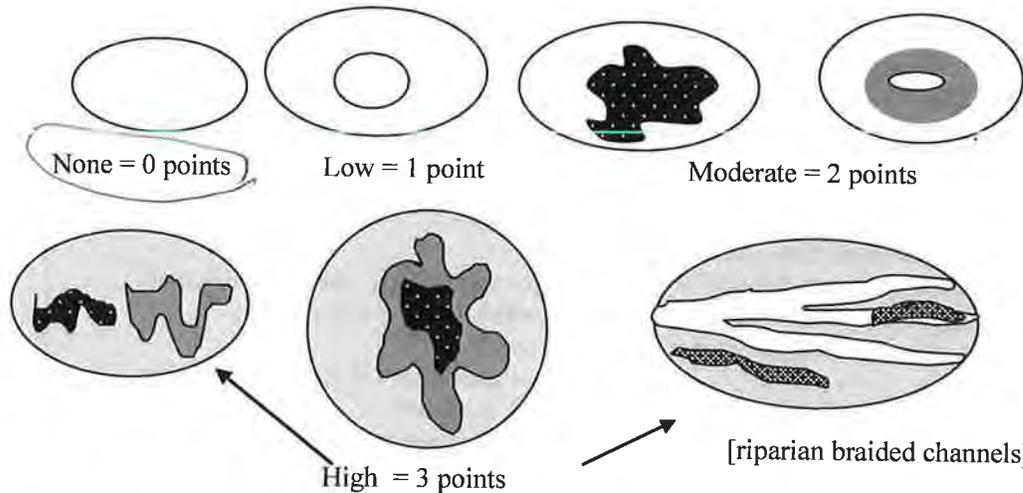
List species below if you want to:

Figure 1

Total for page 2

H 1.4. Interspersion of habitats (see p. 76)

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

Figure

0

H 1.5. Special Habitat Features: (see p. 77)

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

- Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).
- Standing snags (diameter at the bottom > 4 inches) in the wetland
- Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)
- Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)
- At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians)
- Invasive plants cover less than 25% of the wetland area in each stratum of plants

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
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

2

Comments

<p>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</p> <p>H 2.1 <u>Buffers</u> (see p. 80) Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5 <input checked="" type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4 <input checked="" type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 <input type="checkbox"/> 100 m (330ft) of relatively <u>undisturbed vegetated</u> areas, rocky areas, or open water >25% circumference, . Points = 3 <input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3 <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> <input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2 <input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2 <input type="checkbox"/> Heavy grazing in buffer. Points = 1 <input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) Points = 0. <input type="checkbox"/> Buffer does not meet any of the criteria above. Points = 1 <p style="text-align: center;">Aerial photo showing buffers</p>	<p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">3</p>
<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel 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</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR <input checked="" type="checkbox"/> within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;">1</p>

Total for page 4

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>)

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in 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 than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.
- Oregon white Oak:** 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 (*full descriptions in WDFW PHS report p. 161*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in 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)

3

Wetland name or number 1

<p>H 2.4 Wetland Landscape (<i>choose the one description of the landscape around the wetland that best fits</i>) (<i>see p. 84</i>)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p>There is at least 1 wetland within ½ mile. points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p>	3
<p>H 2. TOTAL Score - opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	10
<p>TOTAL for H 1 from page 14</p>	2
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	12

Wetland name or number 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>	Category
SC 1.0 Estuarine wetlands (see p. 86) Does the wetland unit meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO <input checked="" type="checkbox"/>	
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. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — 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 the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Cat. I Cat. II Dual rating I/II

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

<p>SC 4.0 Forested Wetlands (see p. 90) Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. <p>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.</p> <ul style="list-style-type: none"> — Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. <p>YES = Category I <input checked="" type="radio"/> NO X not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p>YES = Go to SC 5.1 <input checked="" type="radio"/> NO X not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) <p>YES = Category I NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>

Wetland name or number /

<p>SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES - go to SC 6.1 NO X not an interdunal wetland for rating <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none">• 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 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger? YES = Category II NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics <i>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</i> If you answered NO for all types enter "Not Applicable" on p.1</p>	<p>N/A</p>

Wetland name or number 2

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): 2 Date of site visit: 5/30/13

Rated by MD Trained by Ecology? Yes No Date of training March 2008

SEC: 13 TOWNSHIP: 14 RANGE: 1W Is S/T/R in Appendix D? Yes No

Map of wetland unit: Figure Estimated size 0.04 ac

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I II III IV

Category I = Score ≥ 70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions

4

Score for Hydrologic Functions

5

Score for Habitat Functions

20

TOTAL score for Functions

29

Category based on SPECIAL CHARACTERISTICS of wetland

I II Does not Apply

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

W

Summary of basic information about the wetland unit

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

Wetland name or number 2

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

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

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

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

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

Classification of Wetland Units in Western Washington

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

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

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

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

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

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

3. Does the entire wetland unit **meet both** of the following criteria?
 The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
 At least 30% of the open water area is deeper than 6.6 ft (2 m)?
 NO - go to 4 YES - The wetland class is **Lake-fringe (Lacustrine Fringe)**

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

Small depressions are present but majority of the wet flows in one direction

Wetland name or number _____

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

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

_____ The overbank flooding occurs at least once every two years.

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

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

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

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

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

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 using the class that represents more than 90% of the total area.

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

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

Wetland name or number 2

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

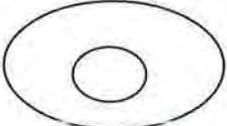
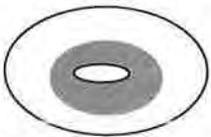
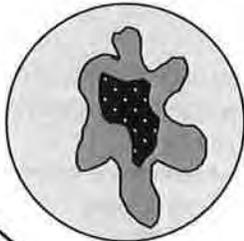
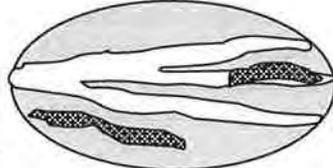
Comments

S Slope Wetlands		Points (only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion		
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	<p>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows)</p> <p>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</p>	3
S	<p>S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area.</p> <p>YES points = 2 NO points = 0</p>	2
S	Add the points in the boxes above	5
S	<p>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.</p> <p>— Wetland has surface runoff that drains to a river or stream that has flooding problems. <i>Green Creek is located downstream. No surface runoff but drains to the Creek</i></p> <p>— Other _____</p> <p>(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</p>	(see p. 70) multiplier <u>1</u>
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	<u>5</u>

Comments

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)											
HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat													
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?													
<p>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 ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p><input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover)</p> <p><i>If the unit has a forested class check if:</i> <input checked="" type="checkbox"/> 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</p> <p><i>Add the number of vegetation structures that qualify. If you have:</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="width: 25%; text-align: right;">4 structures or more</td> <td style="width: 25%; text-align: right;">points = 4</td> </tr> <tr> <td>Map of Cowardin vegetation classes</td> <td style="text-align: right;">3 structures</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td></td> <td style="text-align: right;">2 structures</td> <td style="text-align: right;">points = 1</td> </tr> <tr> <td></td> <td style="text-align: right;">1 structure</td> <td style="text-align: right;">points = 0</td> </tr> </table>		4 structures or more	points = 4	Map of Cowardin vegetation classes	3 structures	points = 2		2 structures	points = 1		1 structure	points = 0	<p>Figure <u> </u></p> <p style="font-size: 2em; margin-top: 20px;">2</p>
	4 structures or more	points = 4											
Map of Cowardin vegetation classes	3 structures	points = 2											
	2 structures	points = 1											
	1 structure	points = 0											
<p>H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Permanently flooded or inundated</td> <td style="width: 25%; text-align: right;">4 or more types present</td> <td style="width: 25%; text-align: right;">points = 3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Seasonally flooded or inundated</td> <td style="text-align: right;">3 types present</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td><input type="checkbox"/> Occasionally flooded or inundated</td> <td style="text-align: right;">2 types present</td> <td style="text-align: right;">point = 1</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td style="text-align: right;">1 type present</td> <td style="text-align: right;">points = 0</td> </tr> </table> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points</p> <p style="text-align: right;">Map of hydroperiods</p>	<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3	<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2	<input type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1	<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0	<p>Figure <u> </u></p> <p style="font-size: 2em; margin-top: 20px;">1</p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3											
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2											
<input type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1											
<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0											
<p>H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cover at least 10 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, purple loosestrife, Canadian Thistle</p> <p><i>If you counted:</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="width: 25%; text-align: right;">> 19 species</td> <td style="width: 25%; text-align: right;">points = 2</td> </tr> <tr> <td>List species below if you want to:</td> <td style="text-align: right;">5 - 19 species</td> <td style="text-align: right;">points = 1</td> </tr> <tr> <td></td> <td style="text-align: right;">< 5 species</td> <td style="text-align: right;">points = 0</td> </tr> </table>		> 19 species	points = 2	List species below if you want to:	5 - 19 species	points = 1		< 5 species	points = 0	<p>Figure <u> </u></p> <p style="font-size: 2em; margin-top: 20px;">1</p>			
	> 19 species	points = 2											
List species below if you want to:	5 - 19 species	points = 1											
	< 5 species	points = 0											

Total for page 4

<p>H 1.4. Interspersion of habitats (see p. 76) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-bottom: 20px;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p>	<p>Figure <u> </u></p> <p style="font-size: 2em; text-align: center;">2</p>
<p>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.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>) <input checked="" type="checkbox"/> At least ¼ 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>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p style="font-size: 2em;">1</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	
<p>Comments</p>	

<p>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</p> <p>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."</p> <ul style="list-style-type: none"> — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5 <input checked="" type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . Points = 3 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3 <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — Heavy grazing in buffer. Points = 1 — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) Points = 0. — Buffer does not meet any of the criteria above. Points = 1 <p style="text-align: center;">Aerial photo showing buffers</p>	<p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">4</p>
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;">YES = 4 points (go to H 2.3) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = 2 points (go to H 2.3) NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? <p style="text-align: center;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;">1</p>

Total for page 5

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>)

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in 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 than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.
- Oregon white Oak:** 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 (*full descriptions in WDFW PHS report p. 161*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. *Geel Creek*
- 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: 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

Wetland name or number 2

<p>H 2.4 <u>Wetland Landscape</u> (choose the one description of the landscape around the wetland that best fits) (see p. 84)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p>There is at least 1 wetland within ½ mile. points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p>	5
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	13
<p>TOTAL for H 1 from page 14</p>	7
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	20

Wetland name or number 2

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
<p>SC 1.0 Estuarine wetlands (see p. 86) Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. <p>YES = Go to SC 1.1 NO <input checked="" type="checkbox"/></p>	
<p>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</p>	<p>Cat. I</p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <ul style="list-style-type: none"> — 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 the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. 	<p>Cat. I Cat. II Dual rating I/II</p>

<p>SC 2.0 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? <i>(this question is used to screen out most sites before you need to contact WNHP/DNR)</i> S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site <input checked="" type="checkbox"/> <u>X</u></p> <p><input checked="" type="checkbox"/> <u>X</u> YES - contact WNHP/DNR (see p. 79) and go to SC 2.2 NO ___</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I <input checked="" type="checkbox"/> <u>X</u> NO not a Heritage Wetland</p>	<p>Cat. I</p>
<p>SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 <input checked="" type="checkbox"/> <u>No</u> - go to Q. 2 Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? Yes - go to Q. 3 <input checked="" type="checkbox"/> <u>No</u> - Is not a bog for purpose of rating Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes - Is a bog for purpose of rating No - go to Q. 4 <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.</p> <ol style="list-style-type: none"> 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 	<p>Cat. I</p>

<p>SC 4.0 Forested Wetlands (see p. 90) Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. <p>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.</p> <ul style="list-style-type: none"> — Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. <p>YES = Category I <input checked="" type="radio"/> NO not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p>YES = Go to SC 5.1 <input checked="" type="radio"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) <p>YES = Category I NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>

Wetland name or number _____

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

Wetland name or number 3

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): 3 Date of site visit: 5/30/13

Rated by M. Dakrell Trained by Ecology? Yes No Date of training March 2016

SEC: 13 TOWNSHIP: 4N RANGE: 1W Is S/T/R in Appendix D? Yes No

Map of wetland unit: Figure Estimated size ~500 sq ft

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I II III IV

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	12
Score for Hydrologic Functions	17
Score for Habitat Functions	17
TOTAL score for Functions	36

Category based on SPECIAL CHARACTERISTICS of wetland

I II Does not Apply

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

III

Summary of basic information about the wetland unit

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

Wetland name or number 3

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
<p>SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.</p>		X
<p>SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</p>		X
<p>SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i></p>		X
<p>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.</p>		X

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

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

Classification of Wetland Units in Western Washington

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

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

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

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

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

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

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

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

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

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

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

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

NO - go to 5 YES - The wetland class is **Slope**

Wetland name or number 3

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

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

N The overbank flooding occurs at least once every two years.

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

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

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

NO - go to 7 YES - The wetland class is **Depressional**

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

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 using the class that represents more than 90% of the total area.

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

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

D Depressional and Flats Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	<p>D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing</p>	Figure <u>3</u>
D	<p>S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0</p>	4
D	<p>D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation >= 95% of area points = 5 Wetland has persistent, ungrazed, vegetation >= 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation >= 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes</p>	Figure <u>3</u>
D	<p>DI.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</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 Area seasonally ponded is < 1/4 total area of wetland points = 0 Map of Hydroperiods</p>	Figure <u>2</u>
D	Total for D 1	<i>Add the points in the boxes above</i> <u>12</u>
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?	(see p. 44)
	<p>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i></p> <ul style="list-style-type: none"> — 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 _____ <p>YES multiplier is 2 NO multiplier is <u>1</u></p>	multiplier <u>1</u>
D	TOTAL - Water Quality Functions	Multiply the score from D1 by D2 <i>Add score to table on p. 1</i> <u>12</u>

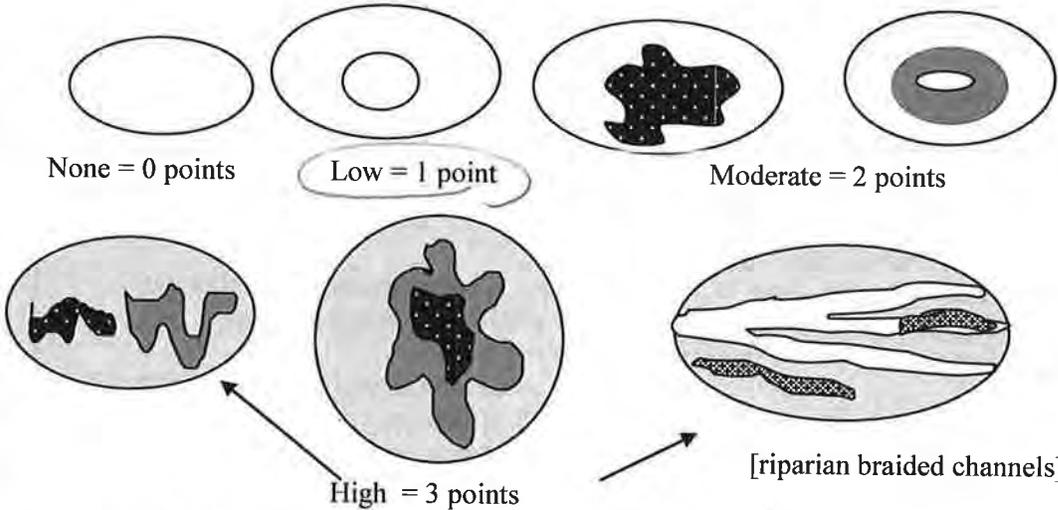
D Depressional and Flats Wetlands		Points (only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation		
D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		<i>(see p. 46)</i>
D	<p>D 3.1 Characteristics of surface water flows out of the wetland unit</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 4</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>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</p> <p><i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i></p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</p>	4
D	<p>D 3.2 Depth of storage during wet periods</p> <p><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></p> <p>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7</p> <p>The wetland is a "headwater" wetland" points = 5</p> <p>Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5</p> <p>Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3</p> <p>Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1</p> <p>Marks of ponding less than 0.5 ft points = 0</p>	0
D	<p>D 3.3 Contribution of wetland unit to storage in the watershed</p> <p><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></p> <p>The area of the basin is less than 10 times the area of unit points = 5</p> <p>The area of the basin is 10 to 100 times the area of the unit points = 3</p> <p>The area of the basin is more than 100 times the area of the unit points = 0</p> <p>Entire unit is in the FLATS class points = 5</p>	3
D	<p>Total for D 3 <i>Add the points in the boxes above</i></p>	7
D	<p>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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.</p> <p><i>Note which of the following indicators of opportunity apply.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <i>Gee Creek</i> <input type="checkbox"/> Other <p>YES multiplier is 2 NO multiplier is 1</p>	<p><i>(see p. 49)</i></p> <p>multiplier</p> <p style="font-size: 2em;">1</p>
D	<p>TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4</p> <p style="text-align: right;"><i>Add score to table on p. 1</i></p>	7

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat		Points (only 1 score per box)							
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?									
<p>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 ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover) </p> <p>If the unit has a forested class check if: <input type="checkbox"/> 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</p> <p>Add the number of vegetation structures that qualify. If you have:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">4 structures or more</td> <td style="width: 50%; text-align: right;">points = 4</td> </tr> <tr> <td>3 structures</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td>2 structures</td> <td style="text-align: right;">points = 1</td> </tr> <tr> <td>1 structure</td> <td style="text-align: right;">points = 0</td> </tr> </table> <p>Map of Cowardin vegetation classes</p>	4 structures or more	points = 4	3 structures	points = 2	2 structures	points = 1	1 structure	points = 0	<p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">0</p>
4 structures or more	points = 4								
3 structures	points = 2								
2 structures	points = 1								
1 structure	points = 0								
<p>H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)</p> <p> <input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only </p> <p> <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points </p> <p>Map of hydroperiods</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">4 or more types present</td> <td style="width: 50%; text-align: right;">points = 3</td> </tr> <tr> <td>3 types present</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td>2 types present</td> <td style="text-align: right;">point = 1</td> </tr> <tr> <td>1 type present</td> <td style="text-align: right;">points = 0</td> </tr> </table> <p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">/</p>	4 or more types present	points = 3	3 types present	points = 2	2 types present	point = 1	1 type present	points = 0
4 or more types present	points = 3								
3 types present	points = 2								
2 types present	point = 1								
1 type present	points = 0								
<p>H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cover at least 10 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, purple loosestrife, Canadian Thistle</p> <p>If you counted:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">> 19 species</td> <td style="width: 50%; text-align: right;">points = 2</td> </tr> <tr> <td>5 - 19 species</td> <td style="text-align: right;">points = 1</td> </tr> <tr> <td>< 5 species</td> <td style="text-align: right;">points = 0</td> </tr> </table> <p>List species below if you want to:</p>	> 19 species	points = 2	5 - 19 species	points = 1	< 5 species	points = 0	<p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">/</p>		
> 19 species	points = 2								
5 - 19 species	points = 1								
< 5 species	points = 0								

Total for page 2

H 1.4. Interspersion of habitats (see p. 76)

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

Figure

H 1.5. Special Habitat Features: (see p. 77)

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

- Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).
- Standing snags (diameter at the bottom > 4 inches) in the wetland
- Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)
- Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)
- At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians)
- Invasive plants cover less than 25% of the wetland area in each stratum of plants

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

H 1. TOTAL Score - potential for providing habitat
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?

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."

- 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5**
 - 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4**
 - 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4**
 - 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3**
 - 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3**
- If buffer does not meet any of the criteria above**
- No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**
 - No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**
 - Heavy grazing in buffer. **Points = 1**
 - Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) **Points = 0.**
 - Buffer does not meet any of the criteria above. **Points = 1**

Aerial photo showing buffers

Figure

4

H 2.2 Corridors and Connections (see p. 81)

H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor*).

YES = 4 points (go to H 2.3) NO = go to H 2.2.2

H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above?

YES = 2 points (go to H 2.3) NO = H 2.2.3

H 2.2.3 Is the wetland:
 within 5 mi (8km) of a brackish or salt water estuary OR
 within 3 mi of a large field or pasture (>40 acres) OR
 within 1 mi of a lake greater than 20 acres?/

YES = 1 point NO = 0 points

1

Total for page 5

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>)

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in 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 than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.
- Oregon white Oak:** 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 (*full descriptions in WDFW PHS report p. 161*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in 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)

3

Wetland name or number 3

<p>H 2.4 <u>Wetland Landscape</u> (choose the one description of the landscape around the wetland that best fits) (see p. 84)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p>There is at least 1 wetland within ½ mile. points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p>	5
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	13
<p>TOTAL for H 1 from page 14</p>	4
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	17

<p>SC 2.0 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? <i>(this question is used to screen out most sites before you need to contact WNHP/DNR)</i> S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site <input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – contact WNHP/DNR (see p. 79) and go to SC 2.2</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I <input checked="" type="checkbox"/> NO <input type="checkbox"/> not a Heritage Wetland</p>	<p>Cat. I</p>
<p>SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none">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 the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 <input checked="" type="checkbox"/> No - go to Q. 22. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? Yes - go to Q. 3 <input checked="" type="checkbox"/> No - Is not a bog for purpose of rating3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Is a bog for purpose of rating No - go to Q. 4 <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</p> <ol style="list-style-type: none">1. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?2. YES = Category I No ___ Is not a bog for purpose of rating	<p>Cat. I</p>

<p>SC 4.0 Forested Wetlands (see p. 90) Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. <p>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.</p> <ul style="list-style-type: none"> — Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. <p>YES = Category I <input checked="" type="radio"/> NO not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p>YES = Go to SC 5.1 <input checked="" type="radio"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) <p>YES = Category I NO = Category II</p>	<p>Cat. I Cat. II</p>

Wetland name or number 3

<p>SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES - go to SC 6.1 NO not an interdunal wetland for rating <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none">• 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 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger? YES = Category II NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics <i>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</i> If you answered NO for all types enter "Not Applicable" on p.1</p>	<p><i>N/A</i></p>

Wetland name or number 4

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): 4 Date of site visit: 5/30/13

Rated by M. Dalzell Trained by Ecology? Yes No Date of training March 2006

SEC: 48 TOWNSHIP: 4N RANGE: 1W Is S/T/R in Appendix D? Yes No

Map of wetland unit: Figure Estimated size ~ 140 sq ft

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I II III IV

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions
Score for Hydrologic Functions
Score for Habitat Functions
TOTAL score for Functions

20
14
14
48

Category based on SPECIAL CHARACTERISTICS of wetland

I II Does not Apply

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

III

Summary of basic information about the wetland unit

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

Wetland name or number 4

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

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✗
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		✗
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		✗
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.		✗

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

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

Classification of Wetland Units in Western Washington

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

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

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

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

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

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

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

NO - go to 3 YES - The wetland class is **Flats**

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

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

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

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

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

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

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

NO - go to 5 YES - The wetland class is **Slope**

Wetland name or number 4

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

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

The overbank flooding occurs at least once every two years.

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

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

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

NO - go to 7 **YES** - The wetland class is **Depressional**

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

NO - go to 8 **YES** - 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 using the class that represents more than 90% of the total area.

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

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

Wetland name or number 4

R Riverine and Freshwater Tidal Fringe Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
R	R 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.52)
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland points = 8 Depressions cover > 1/2 area of wetland points = 4 If depressions > 1/2 of area of unit draw polygons on aerial photo or map Depressions present but cover < 1/2 area of wetland points = 2 No depressions present points = 0	Figure <u>4</u>
R	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height): Trees or shrubs > 2/3 the area of the unit points = 8 Trees or shrubs > 1/3 area of the unit points = 6 Ungrazed, herbaceous plants > 2/3 area of unit points = 6 Ungrazed herbaceous plants > 1/3 area of unit points = 3 Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit points = 0 Aerial photo or map showing polygons of different vegetation types	Figure <u>6</u>
R	<i>Add the points in the boxes above</i>	
R	R 2. Does the wetland unit 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? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <input type="checkbox"/> Grazing in the wetland or within 150ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 NO multiplier is 1	multiplier <u>2</u>
R	TOTAL - Water Quality Functions	Multiply the score from R 1 by R 2 <i>Add score to table on p. 1</i>
		<u>20</u>

Comments

Wetland name or number 4

R Riverine and Freshwater Tidal Fringe Wetlands HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		Points (only 1 score per box)
	R 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	(see p.54)
R	R 3.1 Characteristics of the overbank storage the unit provides: <i>Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit)/(average width of stream between banks).</i> If the ratio is more than 20 10/20 points = 9 If the ratio is between 10 - 20 points = 6 If the ratio is 5 - <10 points = 4 If the ratio is 1 - <5 points = 2 If the ratio is < 1 points = 1	Figure <u> </u>
	Aerial photo or map showing average widths	
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.</i> (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 points = 7 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4 Vegetation does not meet above criteria points = 0	Figure <u> </u>
	Aerial photo or map showing polygons of different vegetation types	
R	Add the points in the boxes above	<u>7</u>
R	R 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> <input checked="" type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. RR track <input type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding <input type="checkbox"/> Other _____ (Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike) YES multiplier is <u>2</u> NO multiplier is 1	(see p.57)
	multiplier	<u>2</u>
R	TOTAL - Hydrologic Functions Multiply the score from R 3 by R 4 Add score to table on p. 1	14

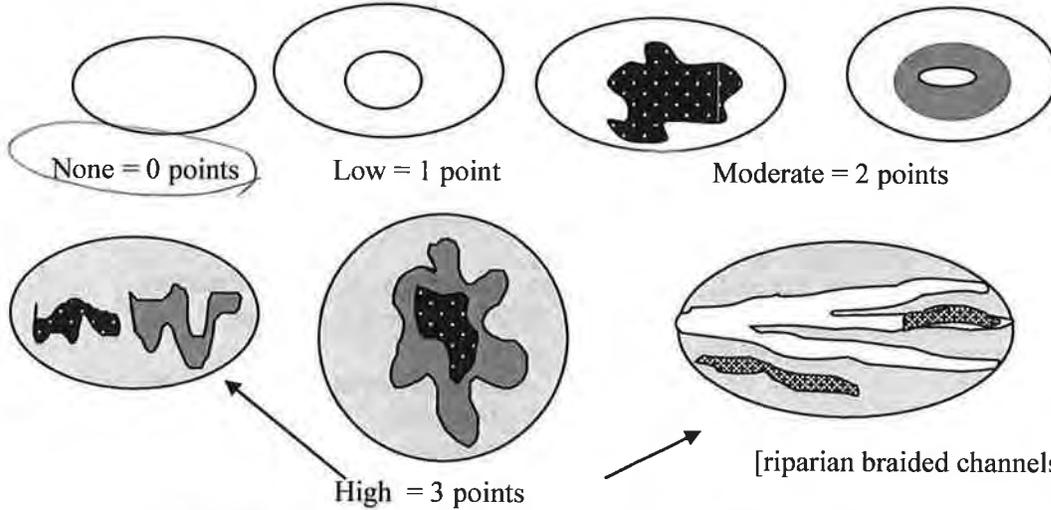
Comments

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)											
HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat													
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?													
<p>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.</p> <p><input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> 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</p> <p>Add the number of vegetation structures that qualify. If you have:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="width: 25%; text-align: right;">4 structures or more</td> <td style="width: 25%; text-align: right;">points = 4</td> </tr> <tr> <td>Map of Cowardin vegetation classes</td> <td style="text-align: right;">3 structures</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td></td> <td style="text-align: right;">2 structures</td> <td style="text-align: right;">points = 1</td> </tr> <tr> <td></td> <td style="text-align: right;">1 structure</td> <td style="text-align: right;">points = 0</td> </tr> </table>		4 structures or more	points = 4	Map of Cowardin vegetation classes	3 structures	points = 2		2 structures	points = 1		1 structure	points = 0	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;">0</p>
	4 structures or more	points = 4											
Map of Cowardin vegetation classes	3 structures	points = 2											
	2 structures	points = 1											
	1 structure	points = 0											
<p>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)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Permanently flooded or inundated</td> <td style="width: 25%; text-align: right;">4 or more types present</td> <td style="width: 25%; text-align: right;">points = 3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Seasonally flooded or inundated</td> <td style="text-align: right;">3 types present</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td><input type="checkbox"/> Occasionally flooded or inundated</td> <td style="text-align: right;"><u>2 types present</u></td> <td style="text-align: right;"><u>point = 1</u></td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td style="text-align: right;">1 type present</td> <td style="text-align: right;">points = 0</td> </tr> </table> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points</p> <p style="text-align: right;">Map of hydroperiods</p>	<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3	<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2	<input type="checkbox"/> Occasionally flooded or inundated	<u>2 types present</u>	<u>point = 1</u>	<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;">/</p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3											
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2											
<input type="checkbox"/> Occasionally flooded or inundated	<u>2 types present</u>	<u>point = 1</u>											
<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0											
<p>H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cover at least 10 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, purple loosestrife, Canadian Thistle</p> <p>If you counted:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="width: 25%; text-align: right;">> 19 species</td> <td style="width: 25%; text-align: right;">points = 2</td> </tr> <tr> <td>List species below if you want to:</td> <td style="text-align: right;"><u>5 - 19 species</u></td> <td style="text-align: right;"><u>points = 1</u></td> </tr> <tr> <td></td> <td style="text-align: right;">< 5 species</td> <td style="text-align: right;">points = 0</td> </tr> </table>		> 19 species	points = 2	List species below if you want to:	<u>5 - 19 species</u>	<u>points = 1</u>		< 5 species	points = 0	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;">/</p>			
	> 19 species	points = 2											
List species below if you want to:	<u>5 - 19 species</u>	<u>points = 1</u>											
	< 5 species	points = 0											

Total for page 2

H 1.4. Interspersion of habitats (see p. 76)

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



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

Figure

H 1.5. Special Habitat Features: (see p. 77)

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

- Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).
- Standing snags (diameter at the bottom > 4 inches) in the wetland
- Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)
- Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)
- At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians)
- Invasive plants cover less than 25% of the wetland area in each stratum of plants

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

H 1. TOTAL Score - potential for providing habitat
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

Comments

<p>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</p>	
<p>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."</p> <ul style="list-style-type: none"> — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5 — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 <input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 3 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3 <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — Heavy grazing in buffer. Points = 1 — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) Points = 0. — Buffer does not meet any of the criteria above. Points = 1 <p style="text-align: center;">Aerial photo showing buffers</p>	<p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">3</p>
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel 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</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? ✓ YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;">1</p>

Total for page 4

Wetland name or number 4

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>)

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in 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 than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.
- Oregon white Oak:** 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 (*full descriptions in WDFW PHS report p. 161*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in 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)

3

Wetland name or number 4

<p>H 2.4 Wetland Landscape (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p>There is at least 1 wetland within ½ mile. points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p>	<p>5</p>
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	<p>12</p>
<p>TOTAL for H 1 from page 14</p>	<p>2</p>
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	<p>14</p>

<p>SC 4.0 Forested Wetlands (see p. 90) Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. <p>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.</p> <ul style="list-style-type: none"> — Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. <p>YES = Category I <input checked="" type="radio"/> NO not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon <i>(needs to be measured near the bottom)</i> <p>YES = Go to SC 5.1 <input checked="" type="radio"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) <p>YES = Category I NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>

Wetland name or number

4

SC 6.0 Interdunal Wetlands (see p. 93)

Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?

YES - go to SC 6.1

NO ~~Y~~ not an interdunal wetland for rating

If you answer yes you will still need to rate the wetland based on its functions.

In practical terms that means the following geographic areas:

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

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?

YES = Category II

NO – go to SC 6.2

Cat. II

SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

YES = Category III

Cat. III

Category of 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

