

Condit Hydroelectric Project Decommissioning

Klickitat and Skamania Counties, Washington FERC No. P-2342 Ecology Docket No. WQC order 8049

Wetland Site Conditions Report

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Prepared for State of Washington Department of Ecology Report period – 2012 to 2016 Prepared - September 2016

Introduction

On October 12, 2010, the Washington Department of Ecology issued the Condit Dam Decommissioning Project 401 Water Quality Certification Order No. 8049. Condition 4.3.5(9) of the 401 certificate requires PacifiCorp to submit monitoring reports documenting wetland site conditions by September 30 of years 1, 3 and 5. The report must contain the information listed in Attachment C of the 401 certificate. Additionally, in year 3, the 401 requires delineation of all compensatory wetlands and inclusion of the delineation information in the report.

This report describes the natural wetland development and the establishment of riparian benches that were implemented to promote wetlands in the project area.

This year-5 report is the last monitoring report that will be submitted pursuant to Condition 4.3.5(9) of the 401 certificate. It includes a wetland delineation report with ratings per the "Washington State Wetlands Rating System for Eastern Washington" as specified by Conditions 4.3.5(12) and 4.3.5(13) of the 401 certificate. The goal of establishment of 4.8 acres of wetlands at the location of the former reservoir and downstream was met by year 3 and a contingency plan that considered off-site mitigation options was not needed. This report provides final documentation that the goal of 4.8 acres of wetlands continues to be met.

1. Description of the mitigation project

PacifiCorp operated the Condit Hydroelectric Project and owns the associated lands on the White Salmon River in Klickitat and Skamania Counties, Washington. The downstream portion of the project area is accessible via highway SR 14, approximately 2 miles west of White Salmon, WA. To reach the upstream portion of the project from the mouth of the White Salmon River, continue approximately 5 miles north from SR 14 on SR 141 alternate route which merges with SR 141, then turn west on Northwestern Lake Road and continue 0.4 miles to the bridge crossing the White Salmon River.

The Condit dam was successfully breached on October 26, 2011 and the dam and flowline were subsequently removed in accordance with the Federal Energy Regulatory Commission surrender

order issued in April 2011. The dam was located approximately 3.3 miles upstream of the confluence of the White Salmon River and the Columbia River. The former reservoir known as Northwestern Lake was approximately 1.8 miles long and covered approximately 92 acres. The project area includes the former reservoir area and the White Salmon River downstream to the mouth. Grading of the reservoir area for slope stability and preparation for revegetation was completed in 2012. Herbaceous cover seeding and tree planting occurred in 2012 and 2013. Additional trees were planted in 2014 and 2016 to supplement areas with lower tree density.

The Revegetation and Wetlands Management Plan (PacifiCorp Energy, 2011) provides the guidance for wetland mitigation (wetland establishment and monitoring) in the project area. Following dam removal, approximately 4.8 acres of wetlands were expected to develop naturally in the former reservoir area and downstream along the White Salmon River. Additional wetland enhancement measures in the plan included site-grading to create gently sloping stream and river banks in the former reservoir area and planting these areas with a riparian/wetland seed mix, trees, and willow cuttings to accelerate wetland and riparian zone development; these graded riparian areas are referred to as riparian benches in this report. The former reservoir and the river downstream to the mouth are to be monitored for five years to document wetland establishment. The 401 certification includes a contingency plan to be implemented in the event 4.8 acres of wetlands had not established in the former reservoir and downstream by year three after dam breaching.

2. Monitoring approach and methods

Wetland monitoring was conducted in accordance with the Revegetation and Wetlands Management Plan to assess the development of naturally occurring wetlands in the former reservoir and downstream along the White Salmon River. In the spring of 2012, following the draining of the reservoir, areas with the potential to establish wetlands (e.g., areas associated with tributary streams, seeps, and shallow slopes at the river's edge) were identified and mapped. From October 15-21, 2013, a wetland inventory was conducted to document the development of wetland characteristics. Areas visited included wetlands identified before dam removal, graded riparian benches, and any potential wetlands sites that were previously marked on aerial photos and maps. The dominant hydrophytic vegetation and evidence of wetland hydrology were recorded.

Potential wetland areas were revisited between July and August of 2014 and again on July 19 to 22, 2016 to document wetland development trends and to conduct wetland delineations at the most promising sites. The wetland delineation used the current Washington State Wetlands Identification and Delineation Manual, the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987), and the 2010 Western Mountains, Valleys, and Coast Regional Supplement to the Manual (USACE, 2010). The current Washington State Wetlands Rating System for Eastern Washington was used to rate the wetlands. Detailed methods for the wetland delineation are described in the report titled Condit Hydroelectric Project Decommissioning Wetlands and Waters of the U.S. and Washington State Delineation Report - September 20, 2016, herein referred to as the Wetland Delineation Report, provided as Attachment 1.

Vegetation monitoring of the riparian benches was conducted in mid-October 2013 and in September 2016. Monitoring of the riparian benches in 2016 consisted of photo documentation and visual estimation of aerial cover for woody plants and ground cover.

3. Goals and objectives for the mitigation project

Establish 4.8 acres of wetlands at the location of the former reservoir and downstream. If this was not possible, a contingency plan that considers off-site mitigation options was to be developed.

4. Summary of monitoring data

2016 Wetland Survey Results

During the 2016 survey many potential wetland areas were examined and 13 sites totaling 5.7 acres were determined to be wetlands. These wetlands consisted of approximately 0.5 acres of wetlands in the former reservoir area and a 5-acre wetland at the mouth of the White Salmon River. The general locations of these wetland sites are shown on Figure 4-1. A summary of the size, rating, and classification is provided in Table 4.1 and more detailed site descriptions, determination data sheets, rating forms, orthophoto maps, and photos for each delineated wetland are included in the Wetland Delineation Report (Attachment 1).

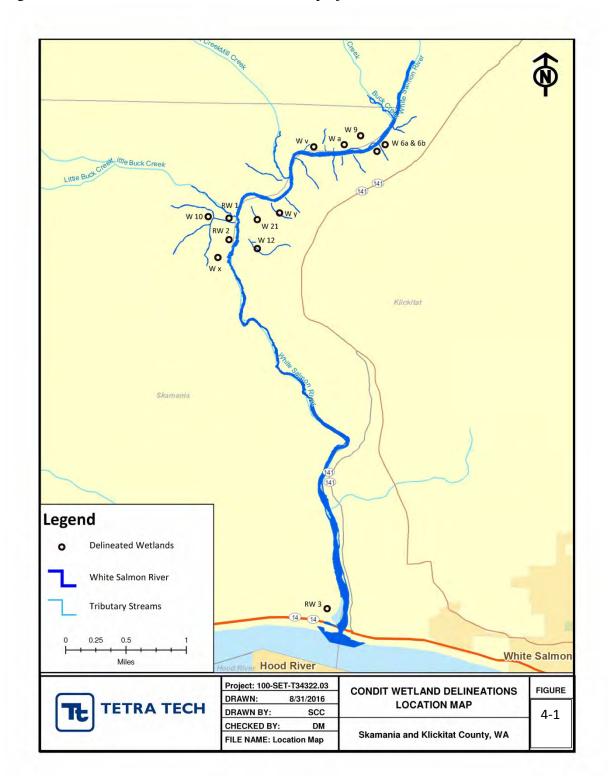
Wetland Identification	Square Footage	Acres	Washington Function Rating	Cowardin Classification
W-6a	669.2	0.02	Ι	PFO
W-6b	7,858.1	0.18	Ι	PFO
W-9	3,107.6	0.07	III	PEM
W-10	813.2	0.02	II	PFO
W-12	4,348.7	0.10	III	PFO
W-21	378.5	0.01	Ι	PFO
W-a	1,347.7	0.03	III	PEM/PSS
W-v	1,000.0	0.02	II	PFO
W-x	819.4	0.02	IV	PEM
W-y	1,140.3	0.03	II	PSS
RW-1	1,679.6	0.04	II	PSS
RW-2	5,770.5	0.13	II	PEM
RW-3	217,286.3	4.99	IV	PEM
Total	246,219.6	5.66		

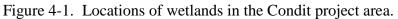
Table 4-1. Wetlands delineated in the 2016 Condit Wetland Survey
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Most of the historic lake fringe wetlands and two riverine wetlands on the tributary streams Mill Creek and Little Buck Creek are no longer present due to sediment movement following the

draining of the reservoir or changes in hydrology and stream gradient. Some remnants of lake fringe wetlands fed by seeps remain, but are now much smaller in size (e.g., W-9). Two small areas that were previously determined to be wetlands (sites W-2 and W-z in the 2014 wetland delineation report), did not exhibit the necessary wetland hydrology to be classified as wetlands in 2016.

Three slope wetlands still occur in their pre-breach locations (W-6a, W-6b, W-12). Three new slope wetlands have developed (RW-1, RW-2, W-x). New wetlands have also developed on a graded riparian bench (W-y) and on seeps along the White Salmon River (W-a, W-v).





Downstream of the dam site, sediment bars have formed in the river reach that extends approximately one mile upstream from the mouth. Comparison of aerial imagery from 2012 and 2013 show that the location and shape of the sediment deposits between river mile 0.3 and 1.0 changed noticeably over the winter of 2013. This recent sediment movement has affected the distribution and re-establishment of wetlands in this area. Three wetlands that occurred along the margins of the White Salmon River are no longer present in their historic location. The degree to which these sediment deposits will continue to change in the future is not known.

In contrast, little change is evident in the shape and location of the large sediment deposit near the mouth of the White Salmon adjacent to the Underwood In-Lieu site (river mile 0 to 0.25). A 5-ac wetland (RW-3, 4.99 acres) was delineated at this location during the 2014 wetland survey and verified in 2016 (see the 2016 Wetland Delineation Report). This wetland is slightly higher in elevation than the normal operating full pool elevation of 77.0 feet MSL behind Bonneville Dam. Photos taken a few hours after the 10,000 cfs peak flow (a 50-year recurrence event) in the White Salmon River on December 9, 2015, show that this wetland was not completely inundated and remained intact.

The hydrological site conditions at the 5-acre wetland at the mouth are similar to conditions that existed for the two narrow wetlands that formerly occurred slightly upstream along the banks of the White Salmon River. These historic wetlands were described as category IV "lake fringe wetlands" that were semi permanently flooded by the Bonneville Pool (CH2M Hill 2003). Those two wetlands, totaling 0.5 acres, and another 0.5-acre riverine wetland that was located further upstream, were expected to be impacted by the dam breach and were included in the 4.8-acre total for anticipated wetland loss. While those historic wetlands are no longer present, they are essentially replaced by the same type of wetland slightly downstream at the mouth.

The overall distribution of wetlands in the project area is different than originally anticipated in the pre-dam removal plans. Wetland development has been influenced by the substrate, topography, and the high gradient of the river system. The largest wetland consequently occurs at the mouth of the White Salmon River rather than in the higher-gradient upstream section. Riparian habitat has developed along the small streams in much of the former reservoir area.

Riparian benches/planting areas:

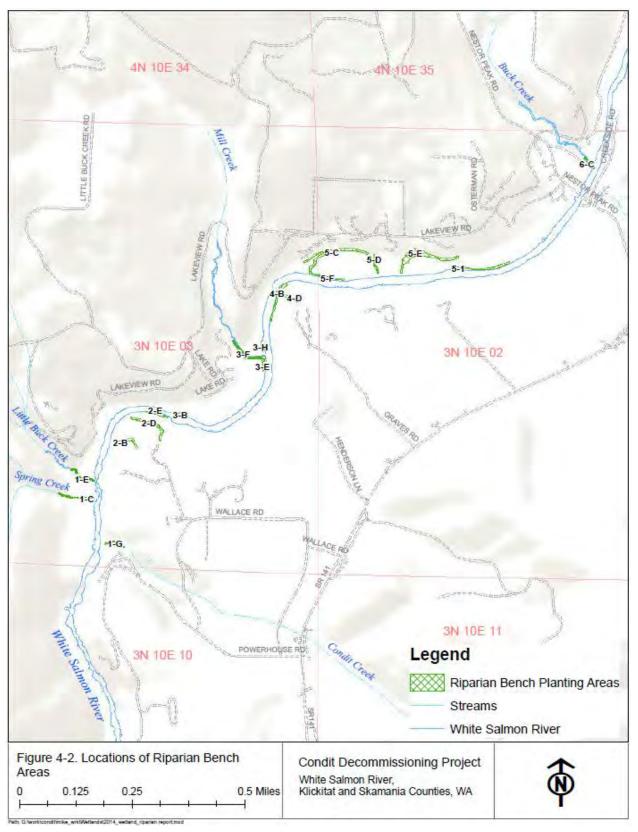
There were approximately 3.7 acres of riparian bench where the stream banks were graded and planted to accelerate the establishment of wetland and riparian vegetation. The riparian benches are listed in Table 4-2 with their original acreage and the latest percent cover estimates from 2016 monitoring. The locations are shown on Figure 4-2. Photos of these sites, taken in September 2016, are provided in Attachment 2 and an index to the photo set page is included in Table 4-2.

Two of these areas have been delineated as wetlands W-a and W-y, while other riparian benches support willows and herbaceous vegetation but were not classified as wetlands. Some of the river riparian benches that were constructed along the White Salmon River have been eroded during successive high flows (e.g., little remains of the original graded contour for riparian bench

site 2-E shown in photo set 7 in Attachment 2) while other sites like 3E, and 3H (photo set 11 in Attachment 2) now have well-established woody riparian vegetation that has resisted scouring. In addition to the graded riparian benches, there are several low-elevation areas along the White Salmon have been colonized naturally by riparian vegetation.

Site Name	Acres	Area Name	Planting zone type	2016 Canopy Cover	2016 Ground Cover	2016 Photos (Photo Set #)
1-C	0.18	Spring Creek LOCATION 1	Stream Riparian Bench Lower 4/5 - 100% Upper 1/5 - 10%		100%	1
1-E	0.12	Little Buck Creek LOCATION 1	Stream Riparian Bench	50%	100%	2
1-G	0.07	Condit Creek LOCATION 1	Stream Riparian Bench	90%	100%	3
2-B	0.17	LOCATION 2	Stream Riparian Bench	95%	100%	4
2-D	0.27	LOCATION 2	Stream Riparian Bench	80%	100%	5
2-E	0.11	LOCATION 2	River Riparian Bench	30%	100%	6&7
3-B	0.03	LOCATION 3	River Riparian Bench	100%	85%	8
3-E	0.05	LOCATION 3	River Riparian Bench	100%	100%	9 & 11
3-F	0.24	Mill Creek LOCATION 3	Stream Riparian Bench	70%	80%	10 & 11
3-H	0.06	LOCATION 3	River Riparian Bench	100%	100%	11 & 12
4-B	0.24	LOCATION 4	River Riparian Bench	60%	80%	13
4-D	0.07	LOCATION 4	Stream Riparian Bench	60%	100%	14
5-C	0.63	LOCATION 5	Stream Riparian Bench	Upper 2/3 - 60% Lower 1/3 - 100%	100%	15
5-D	0.09	LOCATION 5	Stream Riparian Bench	Upper ½ - 25% Lower ½ - 100%	100%	16
5-E	0.86	LOCATION 5	Stream Riparian Bench	Upper 4/5 - 5% Lower 1/5 – 60%	100%	17
5-F	0.15	LOCATION 5	River Riparian Bench	100%	90%	18
5-I	0.32	LOCATION 5	River Riparian Bench	100%	100%	19
6-C	0.09	Buck Creek LOCATION 6	Stream Riparian Bench	25%	60%	20
Total Acres	3.73					

Table 4-2. Riparian bench description and index to photos provided in Attachment 2.



Observations and photos of the riparian areas taken in 2016 show that the woody vegetation cover in many of these areas has increased greatly since dam removal and the initial grading of the reservoir sediment.

Vegetation in riparian areas will continue to establish on stream banks and river benches in the project area. Riparian zones are the natural vegetation condition along the river and like riverine wetlands, they provide important watershed functions. The newly established riparian areas should have similar or increased function and value compared to the low-quality lake fringe wetlands that they have replaced. Together, the combination of delineated wetlands (5.7 acres) and riparian areas (up to 3.7 acress of graded/planted riparian areas and naturally revegetating shoreline of the White Salmon River) provide much more habitat than the 4.8-acre wetland replacement goal.

5. Summary of management actions

Wetlands were expected to develop naturally following dam removal. To supplement natural wetland development, the following management actions have been implemented to establish wetlands in the former reservoir area.

Grading for riparian and wetland establishment

During sediment removal operations, consideration was given to grading areas to create conditions for establishment of riparian and wetland habitat. In the winter of 2012, the concept of excavation of a wetland development site in the upper half of the former reservoir was discussed with the Washington Department of Ecology. After further field investigations, this option was not pursued due to the permeability of the underlying substrate, water management challenges, and its location high above the current river channel. Instead, the grading plan focused on constructing riparian benches and wide banks along drainages to create opportunity zones for riverine wetlands to establish.

During the summer of 2012, seven general areas along the banks of the White Salmon River were graded to form low-gradient riparian benches with surface elevations within roughly 1-5 feet of the summer river elevation. Engineered log jams have been installed on these riparian benches to help reduce shear stress from the river and to protect the benches from erosion damage during high river flow events. Approximately one (1) acre of river riparian bench was created along the White Salmon River. The banks of accessible tributary streams and smaller perennial drainages have been graded to widen floodplains for development of riparian and wetland vegetation. Several seasonally-wet areas were graded to potentially develop into seasonal wetlands by forming swales where water will drain slowly. Approximately 2.3 acres of small stream riparian benches and drainages were developed.

Plantings

The graded riparian benches, tributaries, and swale areas within the former reservoir were seeded with a riparian/wetland seed mix consisting of native grasses and shrubs. Seeding operations in the former reservoir area began on September 5, 2012, and continued through the end of the month. Tree species that are suited to riparian areas were planted along the banks after the

ground cover began to establish. Willow cuttings were also installed along stream banks. Planting occurred during February and March of 2013. Additional tree planting occurred in March and April of 2014 and again in March of 2016 to replace some of the trees that died. Table 3-1 in the Wetland Delineation Report (Attachment 1) contains a list of species planted on the riparian benches.

Monitoring and noxious weed control

Various vegetation monitoring surveys were conducted from 2013 through 2016. Noxious weeds documented during the surveys were targeted for control. Weed control was conducted by Klickitat and Skamania County noxious weed control personnel. The main target species occurring in wetland and riparian areas included yellow-flag iris, a small amount of butterfly bush, and a few Japanese knotweed plants.

6. Difficulties or significant events

The 2012 Wetland Site Conditions Report described the efforts to locate suitable wetland construction sites within the reservoir area and noted that since no promising sites were found, alternate plans for grading swales and widening tributary banks were implemented to promote wetland establishment.

Most wetland sites within the project area are relatively small in size. With the exception of the low-gradient area near the mouth of the river, development of wetlands along the White Salmon River is limited by natural hydrological and geomorphological conditions. The lack of wide floodplains for wetlands to develop on is due to the river's high gradient, steep banks, and exposed bedrock. The riparian (forest) habitat that is developing along the river and on graded tributary riparian areas is more typical of the type of habitat that is believed to have occurred historically along the river as opposed to riverine wetlands. As these riparian areas mature, they will provide increasing watershed protection benefits.

7. Recommendations for corrective actions

Since the amount of wetlands delineated at year 3 exceeded the 4.8-acre replacement goal for the project, no corrective actions were recommended (2014 wetland site conditions report). A contingency plan to provide supplemental wetland mitigation is not needed.

8. Summary of lessons learned

There were many unknown parameters prior to dam removal. Some site conditions such as topography and bedrock that were exposed after dam removal affected the grading work as noted in the 2012 Wetland Site Condition report. These conditions also affected wetland development in that it was difficult to predict how wetlands and tributary streams would respond to draining of the reservoir.

The gradient on newly exposed tributary streams was greater than anticipated in some areas, resulting in less area for wetland vegetation to develop. Some of the streambanks were graded and widened but the area available for wetland development is still constrained by the stream's gradient.

In some cases, a drop in the water table after draining the reservoir resulted in unexpected changes to springs and small drainages, even for water sources that were above the elevation of the former reservoir. Some springs persisted as predicted and others did not. In a few cases, the new topography resulted in springs/seeps in a few new areas within the former reservoir.

9. Site maps

The overall distribution of wetland sites in project area are shown on Figure 4-1. Wetland maps showing each wetland site overlaid on an orthophoto are provided in the Wetland Delineation Report's Appendix D Figures 3-5 (Attachment 1). Figure 4-2 shows the overall distribution of the graded and planted riparian benches.

10. Photographs from photostations

Photos of each wetland site are included in the Wetland Delineation Report's Appendix C (Attachment 1). Photos showing the vegetation developing on the riparian benches are included as Attachment 2.

ATTACHMENT 1

Wetland Delineation Report – 2016

Condit Hydroelectric Project Decommissioning

FERC Project No. 2342

WETLANDS AND WATERS OF THE U.S. AND WASHINGTON STATE DELINEATION REPORT



Prepared for



Prepared by



September 20, 2016

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1 INTRODUCTION

1.1 DELINEATION AUTHORIZATION AND PROPERTY OWNER

This report describes the assessment of the presence, extent, and function of wetlands in the vicinity of the former Condit Hydroelectric Project subsequent to its decommissioning and the removal of project facilities. Restoration of wetlands and vegetation was completed per the project Revegetation and Wetlands Management Plan (RWMP) (PacifiCorp, 2011). This assessment describes the wetland conditions currently on site and was prepared to meet the conditions of the Washington Department of Ecology (Ecology) Condit Dam Decommissioning Project 401 Water Quality Certification Order No. 8049

The breach of Condit dam and draining of the reservoir known as Northwestern Lake in 2011, followed by the removal of project facilities in 2012, affected the delineated wetlands that were present along the fringe of the reservoir and within the riparian corridor of the White Salmon River. The 401 certification requires that 4.8 acres of wetlands be established in the project area. This report serves to demonstrate that approximately 5.66 acres of jurisdictional wetlands are currently present within the Condit Hydroelectric project area.

PacifiCorp is the owner of the former hydroelectric project.

1.2 PROJECT PURPOSE

The RWMP prescribed the development of wetlands and general monitoring parameters within the former reservoir and the reach of the White Salmon River below Condit dam.

The RWMP identified general objectives and procedures to:

- 1. Establish herbaceous vegetation on residual, stable sediments in the former reservoir area that may be subject to erosion, and other areas disturbed by construction activities.
- 2. Establish woody vegetation in riparian and upland areas in the former reservoir area that is representative of early-succession riparian and upland forest habitat of the area.
- 3. Establish at least 4.8 acres of new wetlands in the Project Area following dam breaching. The target for the project area is to include at least 3.8 acres within the former Northwestern Lake footprint and up to 1.0 acre downstream of the dam site.
- 4. Implement a contingency plan for wetland development or purchase if natural regeneration does not meet the 4.8-acre wetland objective.
- 5. Comply with Washington State Noxious Weed Ordinance by controlling and minimizing noxious weed species in the former reservoir area such that there is no greater occurrence than reference noxious weed conditions on nearby properties.

The objective of the RWMP to have no net-loss of wetland areas related to the decommissioning of the Condit dam was based on the expectation that post-dam removal conditions would allow wetlands to naturally establish along the new river channel and provide a net gain in wetland functions. In addition, wetlands temporarily affected downstream were expected to reestablish.

The management plan described wetland mitigation practices and monitoring to facilitate no netloss of wetland areas from the decommissioning of Condit dam, and be consistent with the terms of the Settlement Agreement, Clean Water Act 401 certificate, and recommendations contained in the Condit Dam Removal SEPA Supplemental Environmental Impact Statement (FEIS, 2007). If natural wetland development did not meet the objectives, a wetland contingency plan was to be initiated (PacifiCorp, 2011).

1.3 PROJECT LOCATION

The study area for the wetland delineation report encompasses the footprint of the former reservoir, the dam site and the White Salmon River from the head of the former reservoir below Northwestern Lake Bridge to the mouth of the White Salmon River at its confluence with the Columbia River as illustrated in Figure 1, below. The Project Area extends through Sections 2, 3, 10, 14, 15, and 23 of Township 3 North and Range 10 East. The White Salmon River forms the border between Skamania and Klickitat Counties, Washington. Appendix D, Figure 2 illustrates the position of the delineated wetlands within the project boundary.



Figure 1. Project Location

1.4 DATE OF SITE VISITS

The Project Area has been continuously monitored since the breach of Condit dam on October 26, 2011. Incidental observations of potentially developing wetlands have been noted throughout

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the post-breach inspection process. Occurrence of areas developing wetland characteristics has been noted in site visit reports. Typical features noted in the field include the emergence of springs or seeps, the persistence of hydrophytic vegetation in previously mapped wetlands, and the emergence of newly developing wetlands. An extensive assessment of the remaining and newly formed wetlands was completed in the fall of 2013 (Kleinfelder, 2013) and a formal Wetland Delineation Report was completed in 2014 (Kleinfelder, 2014). The 2014 delineation was submitted to the Washington Department of Ecology.

A final wetland delineation was performed within the Project Area on July 19 to 22, 2016. The principal purpose of the field investigation was to determine the extent to which the wetlands identified in the 2014 delineation report had retained function.

1.5 WETLAND FIELD DELINEATORS

Tetra Tech biologist Stephen Caruana and PacifiCorp biologist Brett Horton performed the field delineations within the Project Area. Field work was led by Tetra Tech biologist Stephen Caruana. Mr. Caruana is a Senior Environmental Scientist with over 35 years of experience conducting stream assessments, wetland delineations, habitat assessments and operating professional grade GPS units. He has completed wetland delineations in the following U.S. Army Corps of Engineers (USACE) Regions: Western Mountains, Valleys, and Coast; Arid West; Eastern Mountains and Piedmont; and the Northcentral and Northeast Region.

PacifiCorp biologist Brett Horton is a Senior Environmental Compliance Analyst with over 10 years of experience conducting stream assessments, wetland delineations, habitat assessments and operating professional grade GPS units. He has completed wetland delineations in the following USACE Regions: Western Mountains, Valleys and Coasts; and Arid West.

Tetra Tech and PacifiCorp biologists observed, measured, and recorded vegetation, soils, and hydrology in the areas of previously delineated wetlands and where landscape features displaying wetland characteristics had been observed during the course of field monitoring since the breach of Condit dam on October 26, 2011. Wetland features were recorded on the data forms for the USACE Western Mountains, Valleys, and Coast Regions (USACE, 2010).

2 METHODS

2.1 DELINEATION METHODS

The wetland investigation of the Condit Project Area was conducted using the wetland delineation methodology outlined in the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the 2010 Western Mountains, Valleys, and Coast Regional Supplement to the Manual (USACE, 2010). This approach recognizes the three (3) parameters of vegetation, soils, and hydrology to identify and delineate wetlands. The indicator status of vegetative species was identified using the United States Army Corps of Engineers 2014 Western Mountains, Valleys, and Coast Regional Wetland Plant List. Nomenclature follows the U.S. Department of Agriculture (USDA) Plants Database (2014). Wetlands and streams were classified according to Cowardin et al. (1979) guidelines.

During the field work, the boundaries of wetlands were identified and locations were recorded using a Trimble GeoXH (GeoExplorer 2008 and GeoXH 6000 models) with attached Tornado or Zephyr external antennas delivering sub-meter accuracy. At representative points along the wetland boundaries, data were collected to document the existing vegetation, soils, and hydrology characteristics of the features.

2.2 MODIFICATION TO METHODS

The RWMP described a modified delineation procedure approved by the Washington Department of Ecology through incorporation into the Condit Dam Decommissioning Project 401 Water Quality Certification Order No. 8049 (Section 4.3.5 (7)). The modified procedure includes two of the standard three criteria in recognition that fully developed hydric soils were unlikely to be present due to the limited amount of time since the draining of the reservoir. However, hydric soil was discernable at most of the delineated wetlands during the 2016 delineation. During the 2016 Survey modification was made to the assessment procedures of the wetlands directly adjacent to the White Salmon River (RW1, RW2, and RW3). Access to these sites was limited to visual observation.

2.3 Sources of Existing Information

The primary source of information for the 2016 survey was the 2014 Wetlands and Waters of the U.S. and Washington State Delineation Report, Condit Hydroelectric Project Decommissioning (Kleinfelder 2014) Published data reviewed included: U.S. Geological Survey (USGS) Northwestern Lake and Hood River 7.5 Topographic Quadrangles (USGS, 1983), U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) Map (USFWS, 2014), Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2014). Local recent and historical climatic data were also reviewed.

3 RESULTS AND DISCUSSION

3.1 DESCRIPTION OF THE SITE

Topography

The topography of the former reservoir footprint was graded to reduce the slopes of areas of unstable sediment deposition to stable slopes of 2H:1V or less. Where practical, slopes were graded to follow the original 1912 contours. The streams which entered the former reservoir were allowed to reconnect with their former channels. When possible, stream banks were widened to create riparian benches for establishment of riparian and wetland vegetation. Approximately one-third of the former reservoir consists of steep, rocky cliff faces. The lower 3 miles of the canyon of the White Salmon River below the site of the former dam is walled in by a steep, narrow chasm. The river widens at its mouth as it enters the Bonneville Pool.

Plant Communities

The plant communities of the Condit Project Area consist of natural low elevation northwest conifer forests and oak stands in the areas surrounding the former reservoir and the canyon of the White Salmon River. The graded area of the former reservoir was seeded with a mixture of native grasses and herbaceous species and planted with native trees and shrubs. Table 3-1 provides a list of the species planted in the reservoir, along the flowline and within the native upland forests.

Common Name	Scientific Name	Wetland Status
Upland Warm-Dry Seed Mix	I	
Poco Barley (cover crop)	Hordeum vulgare	NI
Slender wheatgrass	Elymus trachycaulus	FAC
Idaho fescue	Festuca idahoensis var. Joseph	FACU
Native red fescue	Festuca rubra rubra	FAC
Blue wildrye	Elymus glaucus	FACU
Sherman's big bluegrass	Poa ampla var. Sherman	NI
Canby bluegrass	Poa canbyi var. Canbar	NI
White yarrow	Achillea millefolium	FACU
Sickle keeled lupine	Lupinus albcaulis	NI
Royal penstemon	Penstemon speciosus	NI
Snowberry bush	Symphorocarpos alba	FACU
Ocean spray	Holodiscus discolor	FACU
Deerbrush	Ceanothus integerrimus	NI
Dry Upland Tree Plantings		
Douglas-fir	Pseudotsuga mensiezii	FACU
Grand fir	Abies grandis	FACU
Ponderosa pine	Pinus ponderosa	FACU
Oregon oak	Quercus garryana	FACU
Upland Cool-Moist Seed Mix	·	•
Mountain brome	Bromus marginatus var. Bromar	NI

Table 3-1. Species Planted on the Condit Project as Part of the Stabilization Efforts

Native red fescue	Festuca rubra rubra	FAC
Blue wildrye	Elymus glaucus	FACU
White yarrow	Achillea millefolium	FACU
Sickle keeled lupine	Lupinus albcaulis	NI
Venus penstemon	Penstemon venustus	NI
California brome	Bromus carinatus	NI
Meadow barley	Hordeum brachyantherum	FACW
Snowberry bush	Symphorocarpos alba	FACU
Ocean spray	Holodiscus discolor	FACU
Pacific ninebark	Physocarpus capitatus	FACW
Moist Upland Tree Plantings		
Douglas-fir	Pseudotsuga mensiezii	FACU
Grand fir	Abies grandis	FACU
Western hemlock	Tsuga heterophylla	FACU
Big leaf maple	Acer macrophyllum	FACU
Oregon ash	Fraxinus latifolia	FACW
Red alder	Alnus rubra	FAC
Riparian Wetland Seed Mix		•
Native red fescue	Festuca rubra rubra	FAC
Mountain brome	Bromus marginatus var. Bromar	NI
Spike bentgrass	Agrostis exerata	FACW
Tufted hairgrass	Deschampsia caespitosa	FACW
White yarrow	Achillea millefolium	FACU
Slough sedge	Carex obnupta	OBL
Western mannagrass	Glyceria occidentalis	OBL
American sloughgrass	Beckmannia syzigachme	OBL
Snowberry bush	Symphorocarpos alba	FACU
Ocean spray	Holodiscus discolor	FACU
Pacific ninebark	Physocarpus capitatus	FACW
Riparian Tree Plantings		
Western red cedar	Thuja plicata	FAC
Western hemlock	Tsuga heterophylla	FACU
Big leaf maple	Acer macrophyllum	FACU
Oregon ash	Fraxinus latifolia	FACW
Red alder	Alnus rubra	FAC
Black cottonwood	Populus trichocarpa (balsamifera)	FAC
Riparian Willow Cuttings		
Pacific willow	Salix lucida	FACW
Sitka willow	Salix sitchensis	FACW

Note: NI – No Indicator. Plant species with no indicator status or no listing are considered UPL (Upland) for wetland delineation purposes.

Soils Mapped and Observed On-site

The soils of the Condit Project Area consist of graded reservoir sediments in the footprint of the former reservoir and soils mapped by the NRCS in the upland forests surrounding the former reservoir and above the Canyon of the White Salmon River. The pre-breach reservoir was mapped as water which comprises the majority of the existing project area. The remaining

sediments within the footprint of the former reservoir range from coarse sand to fine clays and all grades in-between.

Soils mapped by the NRCS within the Project Area include the following soils:

68 – McElroy gravelly loam, 30 to 65 percent slopes: The McElroy series consists of very deep, well drained soils formed in colluvium and residuum derived from basalt mixed with volcanic ash in the surface. McElroy soils are on mountains and have slopes of 5 to 90 percent. The mean annual precipitation is about 50 inches and the mean annual temperature is about 46 degrees F.

90A – Hood loam, 8 to 15 percent slopes: The Hood series consists of very deep, well drained soils formed in silty or loamy lacustrine deposits. Hood soils are on dissected terraces and terrace escarpments. Slopes are 0 to 65 percent. The mean annual precipitation is 38 inches and the mean annual temperature is 50 degrees F.

92 - Husum gravelly ashy loam, 0 to 5 percent slopes: The Husum series consists of very deep, well drained soils formed in volcanic ash over alluvium derived from basalt and andesite. Husum soils are on river terraces and alluvial fans. Slopes are 0 to 15 percent. The mean annual precipitation is about 40 inches and the mean annual temperature is about 49 degrees F.

161 - Xerorthents-Rock outcrop complex, 50 to 90 percent slopes: No series description.

177 (W) – Water: The reservoir footprint as mapped prior to the breach of Condit Dam.

Soils observed at delineated wetland features included silts, loams, silt loams, sands, silty clay loams, and sandy loams.

Hydrology Information

According to the National Weather Service, the average annual precipitation for Snowden, WA (approximately 5.3-miles east of the project site) is 35.33 inches (Table 3-2). The average annual precipitation for the Mt. Adams Ranger Station, Trout Lake, WA (approximately 14-miles north of the project site) is 43.68 inches (Table 3-3). During the 12 months preceding the initial site visit (July 1, 2015 – July 22, 2016), the Snowden station recorded 39.94 inches and the Mt. Adams Ranger Station received 58.95 inches of precipitation. Precipitation measured 0.0 inches in the week prior to the July 19-22, 2016 field visit. Weather conditions during the site visit consisted of temperatures ranging from 57.0°F to 97.0°F. **Appendix E** displays the precipitation data for the two stations and the WETS data.

Category	April	May	June	July 1-22	2016 Water Year Totals
Recorded Precipitation (inches)	0.51	0.46	0.77	0.36	39.06
30-70% Normal Range (inches)	0.50-1.16	0.59-1.38	0.33-0.77	0.08-0.77	10.60-24.73
Comparison to Normal Range	Within	Below	Within	Within	Above

Table 3-2. Summary of Precipitation from April 2016 to July 22, 2016 at Snowden, WA¹

Table 3-3. Summary of Precipitation from April 2016 to July 22, 2016 at Mt. Adams Ranger Station WA

Category	April	May	June	July 1-22	2016 Water Year Totals			
Recorded Precipitation (inches)	0.49	1.05	1.04	0.22	58.56			
30-70% Normal Range (inches)	1.37-3.12	0.86-1.85	0.50-1.3	0.06-0.51	37.21 - 48.31			
Comparison to Normal Range	Below	Within	Within	Within	Above			

Historic Wetland Mapping

Wetland delineations were completed at the Condit Hydroelectric Project in August 2003 (CH2M Hill, 2003) and follow up wetland inspection in August 2007 (CH2M Hill, 2008). At Northwestern Lake, a total of 19 wetlands encompassing 5.7 acres were delineated. Of these, 3.8 acres were lake fringe wetlands artificially maintained by operation of Condit dam; 0.9 acre were riverine wetlands independent of Northwestern Lake and associated with major streams (Spring, Buck, Little Buck, Mill, and Condit Creeks); and 1.0 acre was slope wetlands (hillside spring-fed seeps) independent of Northwestern Lake. Nearly all of the artificial lake fringe wetlands were low-function (Category IV) wetlands and were dominated by emergent vegetation consisting largely of reed canary grass (*Phalaris arundinacea*), (FACW) and yellow-flag iris (*Iris pseudacorus*), (OBL), both listed as Class C weeds in Washington. The riverine wetlands and slope wetlands had higher function (Category II or III) and were dominated by forested vegetation consisting primarily of native red alder (*Alnus rubra*), (FAC) or western red cedar (*Thuja plicata*), (FAC). Nearly all of these wetlands received their primary source of hydrology from the Northwestern Lake Reservoir.

Along the lower White Salmon River downstream of Condit dam, a total of three wetlands covering 1.0 acre were delineated. Of these, two areas totaling 0.5 acre were lake fringe wetlands artificially maintained by the operation of the Bonneville dam on the Columbia River (White Salmon River mouth); and 0.5 acre was a riverine wetland associated with the free-flowing portion of the White Salmon River. The artificial lake fringe wetlands were low function (Category IV) and were also dominated by emergent vegetation consisting largely of reed canary grass and yellow-flag iris. The one riverine wetland downstream from the dam had slightly higher function (Category III) and was dominated by scrub-shrub vegetation consisting of red alder and Pacific willow (*Salix lucida*), (FACW) or Sitka willow (*Salix stichensis*), (FACW).

¹ WETS data obtained from the USDA Natural Resources Conservation Service National Water and Climate Center. Assessed at: http://www.wcc.nrcs.usda.gov/climate/wets_doc.html

A total of 17 streams or seeps were observed entering the reservoir. All were perennial except for one intermittent stream observed at Wetland 2. The major streams are Spring Creek, Little Buck Creek, Mill Creek, Buck Creek, and Condit Creek. Three perennial spring-fed seeps were observed.

In 2007, areas immediately adjacent to the reservoir were investigated to assess whether they could be used to create or enhance up to 4.8 acres of wetland habitat should a wetland development contingency plan be necessary (CH2M Hill, 2008). That assessment indicated several areas where wetlands were expected to develop based on expected persistence of suitable hydrology following dam removal coupled with flatter topography.

In July and August 2014 a complete survey of all previously delineated wetlands was completed by PacifiCorp and their contractor. During the 2014 survey, a total of seven of the original 19 pre-breach wetlands were determined to retain hydrologic characteristics sufficient to meet the requirements for USACE wetlands. The wetlands were in most cases not the original size as a major source of hydrology (i.e. the lake) was no longer available. An additional eight features were identified as meeting the requirements for wetlands described in Section 2.1 above. Wetland total acreage identified in the 2014 survey was 6.29 acres.

3.2 FINDINGS

Wetland Descriptions

Detailed descriptions of the vegetation, hydrology, and soils present at each wetland feature are provided on the Wetland Determination Data Forms in **Appendix A**. A summary table is provided at the front of the data forms. Functional ratings utilizing the Wetland Rating Form – Eastern Washington² for each wetland are provided in **Appendix B**. A brief summary of each feature is provided below in Table 3-4. The wetlands identified with a number (e.g., W-10) indicate either wetlands delineated before the breach or an intact portion of those wetlands. The wetland features identified with a letter (e.g., W-a) have developed since the breach. The wetlands designated as RW (e.g., RW-1) are features adjacent to the river or within the floodplain of the river but above the Ordinary High Water Mark (OHWM).

² When determining whether to use the Eastern or Western Washington Rating System, the Washington Department of Ecology requests that users refer to the definition in WAC 222-16-010: "Eastern Washington" means the geographic area in Washington east of the crest of the Cascade Mountains from the international border to the top of Mt. Adams, then east of the ridge line dividing the White Salmon River drainage from the Lewis River drainage and east of the ridge line dividing the Little White Salmon River drainage from the Washington-Oregon state line.

Wetland Identification	Square Footage	Acres	Washington Function Rating	Cowardin Classification	Appendix D Figure	Appendix C Photo Set
W-6a	669.2	0.02	Ι	PFO	4	3 C&D
W-6b	7,858.1	0.18	Ι	PFO	4	3 E&F
W-9	3,107.6	0.07	III	PEM	4	1 A&B
W-10	813.2	0.02	II	PFO	3	3 A&B
W-12	4,348.7	0.10	III	PFO	3	2 C&D
W-21	378.5	0.01	Ι	PFO	3	2 A&B
W-a	1,347.7	0.03	III	PEM/PSS	4	1 C&D
W-v	1,000.0	0.02	П	PFO	4	5 A&B
W-x	819.4	0.02	IV	PEM	3	2 E&F
W-y	1,140.3	0.03	II	PSS	3	1 E&F
RW-1	1,679.6	0.04	П	PSS	3	4 A&B
RW-2	5,770.5	0.13	II	PEM	3	4 C&D
RW-3	217,286.3	4.99	IV	PEM	5	4 E&F
Total	246,219.6	5.66				

Table 3-4. 2016 Condit Wetland Summary

The wetlands of the United States are classified utilizing the Cowardin nomenclature, a comprehensive classification system of wetlands and deepwater habitats. Under this system, wetlands are of two basic types: coastal or estuarine and inland or palustrine. The pre-breach wetlands of the Condit Project were mapped and classified utilizing the Cowardin system. All wetlands at the Condit Project were classified as palustrine, a non-tidal wetland dominated by trees, shrubs, persistent emergent, vascular plants, emergent mosses or lichens. The three wetlands types identified were:

- PEM Palustrine Emergent
- PFO Palustrine Forested
- PSS Palustrine Scrub-Shrub

Below is a complete summary of all wetlands that were delineated during the 2016 survey within the project area. Wetlands identified during either pre-breach surveys or during the 2014 delineation which no longer support wetland characteristics have been omitted from this report.

Wetland 6a – (Appendix D, Figure 4, Photo Set 3 c and d), (PFO), (Function Class II). This feature was originally mapped as a 0.2-acre slope wetland located at a small seep. Principal vegetation consisted of red alder and western red cedar (*Thuja plicata*), (FAC). Hydrology was supported by a perennial spring and a seepage plane.

<u>Wetland 6A Field Conditions</u> – This wetland remains intact. It is spring fed and exhibits very wet soils and standing water conditions. Vegetation remains as originally noted as red alder and western red cedar in addition to colts foot (*Tussilago farfara*), (FACU), jewelweed, and Pacific dogwood (*Cornus nuttalli*), (FACU). It was unchanged from the previous survey in 2014. Field classification of the soils within the feature is silty clay loams meeting a Histic Epipedon

indicator. This feature meets the three parameters and measures 669.2 square feet (ft²), (0.02 acres).

Wetland 6b – (Appendix D, Figure 4, Photo Set 3 e and f), (PFO), (Function Class II). This feature was originally mapped as a 0.3-acre slope wetland with minor lake fringe. It was fed by a small stream/spring. The palustrine forested wetland was dominated by red alder, western red cedar, and skunk cabbage (*Lysichiton americanus*), (OBL).

<u>Wetland 6B Field Conditions</u> – This wetland, which is just downstream from Wetland 6A, also retains its wetland characteristics. It is fed by a small stream that was flowing at the time of the site visit. Standing water was present in the center of the feature and soils exhibited very wet/spongy conditions. Vegetation remains the same as first mapped. Field classification of the soils within the feature is silty clay loams meeting a Histic Epipedon indicator. This feature retains the wetland characteristics initially mapped in 2014. This feature meets the three parameters and measures 7,858.1 ft² (0.18 acres).

Wetland 9 – (Appendix D, Figure 4, Photo Set 1 a and b) (PEM) (Function Class III). This feature was originally mapped as a narrow lake fringe palustrine emergent wetland consisting of reed canarygrass and yellow-flag iris. Hydrology was provided by inundation from the reservoir. This feature retains the wetland characteristics initially observed in the 2014 survey.

<u>Wetland 9 Field Conditions</u> – This former lake fringe wetland has been partially seeded as part of the reservoir revegetation, other areas retain the original lake fringe vegetation of primarily reed canarygrass and yellow-flag iris. Scattered pockets contain *Juncus spp*. jewelweed (*Impatiens capensis*), (FACW), and Douglas spirea (*Spirea douglasii*), (FACW). Two ephemeral streams cross Wetland 9 and have been planted with riparian species. There is some evidence that a seep is present along parts of the wetland feature. Field classification of the soils within the feature is silt loams meeting a Depleted Matrix indicator. The remnant portion meets the three parameter criteria and measures 3,107.6 ft² (0.07 acres)

Wetland 10 – (Appendix D, Figure 3, Photo Set 3 a and b), (PFO), (Function Class II). This feature was originally mapped as a 0.1-acre riverine wetland with a minor lake fringe. Vegetation consisted of red alder, vine maple (*Acer circinatum*), (FAC), and mosses (*Bryophyte spp*.). Hydrology was supported by the perennial flow of Spring Creek and minimal inundation from Northwestern Lake. This feature remains intact and exhibits the same characteristics initially mapped in the 2014 survey.

<u>Wetland 10 Field Conditions</u> – This wetland feature remains essentially intact. It has not subsided or down-cut due primarily to the stabilizing influence of a large log across the stream. Vegetation present includes red alder (*Alnus rubra*, (FAC), jewelweed, vine maple, yellow-flag iris, mosses, and ferns. Field classification of the soils within the feature is silt loams meeting a Histosol indicator. The reed canarygrass present composes the original lake fringe component. The remaining PFO component meets the three parameters and measures 813.2 ft² (0.02 acre).

Wetland 12 – (Appendix D, Figure 3, Photo Set 2 c and d), (PFO), (Function Class III). This feature was originally mapped as a 0.4-acre riverine wetland with a minor lake fringe. It is

located on Condit Creek. Dominant vegetation included red alder, western red cedar, and reed canarygrass. The water source was perennial flow of Condit Creek and a separate spring.

<u>Wetland 12 Field Conditions</u> – Portions of this wetland feature remain intact due to the presence of perennially flowing Condit Creek and a strong spring. Portions of the lower feature have subsided with the breach of the dam. The former lake fringe component is vegetated with reed canarygrass. An additional spring-fed seep dominated by cattails was delineated and included as part of Wetland 12. Field classification of the soils within the feature is silty clay loams meeting a Depleted Matrix indicator. The potential for downcutting noted in the 2014 survey has been realized. The feature has diminished in size since last surveyed in 2014. This feature meets the three parameters and measures 4,348.7 ft² (0.10 acre).

Wetland 21 – (Appendix D, Figure 3, Photo Set 2 a and b), (PFO), (Function Class II). This feature was originally mapped at less than 0.1-acre, and it was a slope wetland with a minor lake fringe component. Dominant vegetation consisted of red alder and red cedar with an understory of beaked hazelnut (*Corylus cornuta*), (FACU), and skunk cabbage. The water source was a perennial stream and spring. At the time of the 2016 field visit, the hydrological conditions were diminished.

<u>Wetland 21 Field Conditions</u> – This wetland feature retains its vegetative and hydrological conditions as noted when originally mapped. The hydrology of the feature is a seep/spring. The vegetation present consists of red alder, jewelweed, horsetail (*Equisetum arvense*), (FAC), big leaf maple (*Acer macrophyllum*), (FACU), western red cedar, and skunk cabbage. Field classification of the soils within the feature is silt loams meeting a Hydrogen Sulfide indicator. This feature meets the three parameters and measures 378.5 ft² (0.01 acre).

Wetland a – (Appendix D, Figure 4, Photo Set 1 c and d) (PEM) (Function Class III). This wetland is fed by a persistent spring that first appeared following draining of the reservoir. Several pools have formed below the spring's outfall. The pools show the influence of iron bacteria with the characteristic orange slime present on the surface of the pools. The pools are on the floodplain approximately 8 feet above the lowest river levels of the summer. The area of this feature is being colonized by a variety of vegetation including *Juncus* spp. and *Carex* spp. This feature was inundated during the high water event of December 2015, an approximate 60- to 70-year recurrence event. This feature is in transition to a PFO wetland as willow, alder, and cottonwood recruitment is increasing in density.

<u>Wetland a Field Conditions</u> – This feature continues to develop in the complexity of the hydrophytic vegetation present. The spring is persistent. The soils within the feature field classified as sands meeting a Sandy Redox indicator. Hydrogen sulfide aroma was perceived. This feature meets the three parameters and measures 1,347.7 ft² (0.03 acre).

Wetland v – (Appendix D, Figure 4, Photo Set 1 e and f) (PFO) (Function Class II). This feature is being supported hydrologically by seeps and springs. Vegetation consists primarily of cottonwood and *Juncus spp*.

<u>Wetland v Field Conditions</u> – This feature is continuing to develop wetland characteristics due to the permanent seepage. The soils within the feature field classified as sand meeting a Sandy Redox indicator. This feature is accessible only by boat due to the steepness of the slope above the feature. It was viewed remotely and presented the same compliment of vegetation that was observed in the 2014 survey. This feature meets the three parameters and measures 1,000.0 ft² (0.02 acre).

Wetland \mathbf{x} – (Appendix D, Figure 3, Photo Set 2 e and f) (PEM) (Function Class IV). This wetland arises as a spring in the vicinity of the west abutment of the former dam. It flows over exposed bedrock forming several shallow pools. Several species of hydrophytic vegetation have colonized the site. The spring is persistent. Aquatic invertebrates (worms) are present.

<u>Wetland x Field Conditions</u> – This feature is dominated by velvet grass (*Holcus lanatus*, (FAC)), monkeyflower (*Mimulus guttatus*), (OBL), Carex species (*Carex* spp.), and duckweed (*Lemna minor*), (OBL). Standing water is present in permanent pools maintained by a spring. The soils within the feature field classified as silt loams meeting a Depleted Matrix indicator. Compared to 2014, this feature presented a greener and more vibrant appearance during the 2016 survey. It meets all three parameters and measures 819.4 ft² (0.02 acre).

Wetland y - (Appendix D, Figure 3, Photo Set 5 a and b), (PSS), (Function Class II). This feature is developing within the floodplain of a tributary stream. It was mapped as two separate portions.

<u>Wetland y Field Conditions</u> – This wetland is developing in the wider sections of a perennial stream. It is dominated by Pacific willow, *Carex* and *Juncus spp*. and jewelweed. The soils within the feature field classified as a loamy silt meeting a Redox Dark Surface indicator. This feature meets the three parameters and measures 1,140.3 ft² (0.03 acres).

The following three riverine wetlands (RW 1, 2, and 3) were delineated in 2014 and viewed remotely during the 2016 survey. These features are only accessible by boat. At the time of the 2016 survey, rafting outfitters advised against running the lower river below Northwestern Park because conditions were unsafe. These features are visible for remote viewing and the same compliment of vegetation as noted during the 2014 review was visible. Soil conditions described are based on the 2014 delineation (Kleinfelder 2014).

Wetland RW 1 – (Appendix D, Figure 3, Photo Set 4 a and b) (PSS) (Function Class II). This feature was mapped during a survey of potential wetlands forming along the White Salmon River. The substrate consists of reservoir sediments that have stabilized and are retaining moisture from seeps and springs.

<u>Wetland RW 1 Field Conditions</u> – This feature is dominated by Pacific willow, cottonwood, and *Juncus spp*. The soils within the feature field classified as silty clay loams meeting a Depleted Matrix indicator. This feature meets the three parameters and measures $1,679.6 \text{ ft}^2$ (0.04 acre).

Wetland RW 2 – (Appendix D, Figure 3, Photo Set 4 c and d), (PEM) (Function Class II). This feature was mapped during a survey of potential wetlands forming along the White Salmon

River. The substrate consists of reservoir sediments that have stabilized and are retaining moisture from seeps and springs.

<u>Wetland RW 2 Field Conditions</u> – This feature is dominated by cottonwood, reed canarygrass and *Juncus spp*. The soils within the feature field classified as silt loam meeting a Depleted Matrix indicator. This feature meets the three parameters and measures $5,770.5 \text{ ft}^2$ (0.13 acre).

Wetland RW 3 – (Appendix D, Figure 3, Photo Set 4 e and f), (PEM), (Function Class IV). This feature is the large sediment bar deposited at the mouth of the White Salmon River during the breach event. Vegetation throughout the majority of the wetland is emergent; however, large sections of the wetland are beginning to transition to a Palustrine Scrub-Shrub (PSS) wetland. Current elevation of this area varies from 76.9 to 77.8 feet above Mean Sea Level (MSL). The Bonneville Pool elevation varies between 70.0 to 82.5 feet above MSL but mostly remains at the average pool elevation of 76.5 feet above MSL.

The operating range of the Bonneville Pool varies from elevation 70.0 to 77.0 feet above Mean Sea Level (MSL). Gage data show the pool elevation occasionally rises toward the maximum pool elevation of 82.5 feet above MSL. A review of photos since early 2012 and dozens of site investigations indicate that this wetland is rarely (if ever) inundated by high flows from either the White Salmon River or the Bonneville Pool.

<u>Wetland RW 3 Field Conditions</u> – This feature is dominated by *Juncus spp.*, Lady's thumb (*Persicaria maculosa*), (FACW), and other emergent species. Hydrology is supported by the river and Bonneville Pool. The soils within the feature field classified as silts and sands meeting a Depleted Dark Surface indicator. This feature meets the three parameters and measures 217,286.3 ft² (4.99 acres).

3.3 SUPPLEMENTAL INFORMATION

Locations 1 -

Of the 13 identified wetlands, 12 are located within the footprint of the former reservoir. The only substantial wetland identified downstream of the site of the former Condit dam was identified at the mouth of the White Salmon River on the extensive sediment bar deposited during the breach.

Contrast with Non-wetlands

Contrast with non-wetlands was established in the field based upon presence of hydrophytic vegetation, evidence of hydrology, and development of hydric soil indicators. Evidence from long-term field observations since the breach of Condit dam also informed the initial choice of potential wetland features.

How was Boundary Chosen

Upland soil sample points were chosen based on the presence of upland vegetation, topographic gradient, and lack of visible hydrology indicators.

Types of Other Waters Identified

Description

A total of 11 stream reaches were daylighted following the breach of Condit dam and the draining of the reservoir. A total length of 6,361.4 feet with approximately 1.26 acres of riparian zone has developed. The riparian zones were enhanced during the revegetation effort with the planting of native trees. A summary of the streams and their classification as Waters of the United States (WoUS) is provided in Table 3-5 below.

All the streams are tributaries of the White Salmon River. Buck Creek, Mill Creek, Little Buck Creek, Spring Creek, and Condit Creek are perennial streams with primarily cobble and gravel substrates. Evidence of flow includes a measurable OHWM and observable bed, bank, and channel characteristics. These streams appear to have a significant nexus to a Traditional Navigable Water (TNW) and meet the definition of a jurisdictional water of the United States. Unnamed Stream 6 is also a perennial stream; its substrate is a mixture of cobbles and former reservoir sediments. Unnamed Streams 1 through 5 are intermittent streams with substrates composed primarily of cobbles and the silts and sands of the former reservoir sediments. They exhibit evidence of an OHWM and developing bed and banks. All of these streams also have a significant nexus to a TNW and meet the definition of a WoUS. Streams are identified on Figures 2, 3, and 4.

Stream Identification	Classification	Lineal Extent (ft.)	Square Footage (ft ²)	Acreage (ac.)
Buck Creek	Perennial	599.50	10,866.70	0.25
Unnamed Stream 1	Intermittent	315.60	291.00	0.01
Unnamed Stream 2	Intermittent	381.00	2,524.80	0.06
Unnamed Stream 3	Intermittent	569.60	1,465.40	0.03
Mill Creek	Perennial	976.90	11,094.30	0.25
Little Buck Creek	Perennial	782.10	6,830.60	0.16
Spring Creek	Perennial	575.00	4,650.10	0.17
Condit Creek	Perennial	596.50	4,629.70	0.11
Unnamed Stream 4	Intermittent	516.60	4,187.90	0.10
Unnamed Stream 5	Intermittent	663.20	2,469.10	0.06
Unnamed Stream 6	Perennial	385.40	2,400.60	0.06
	Totals	6,361.4	51,410.2	1.26

 Table 3-5. Waters (Streams) of the United States Present on the Condit Project

Maps and Drawings

The identified wetland features are illustrated on a set of maps exhibited in a series of figures following this report in Appendix D.

Priority Habitats, Species, Rare Plants and High Quality Wetlands

The U.S. Fish and Wildlife³ identifies nine threatened and endangered species, the use of the area by eighteen migratory birds, forested/shrub wetlands, freshwater ponds, lake, and riverine wetlands within a three mile radius of the project center. However, since the area of the former graded and revegetated reservoir has had insufficient time to develop complex, mature ecosystems, it is unlikely to contain any rare plants or species. The White Salmon River has a high priority for the conservation of salmonid stocks. Migratory bird species and anadromous fish transit through the project area. The listed threatened and endangered terrestrial species require mature old growth forests or riparian zones which have not yet developed within the project area. An additional ten endangered and twenty three threatened plants are identified by the Washington Natural Heritage Program within Klickitat County.⁴ Detailed surveys for listed threatened, endangered, and rare species were not completed during the current wetland survey.

³ U.S. Fish and Wildlife Information for Planning and Conservation (IPaC) assessed at:

https://ecos.fws.gov/ipac/project/YQGYOKDVVZD7TNHIZ5LZNQCVWA/resources

⁴ Washington Department of Natural Resources, Washington Natural Heritage Program. Assessed at: http://www.dnr.wa.gov/NHPspecies

4 CONCLUSION

4.1 SUMMARY OF FEATURES

Wetlands

Wetlands within the project area are classified as emergent (PEM), scrub/shrub (PSS), and forested (PFO). All of the wetlands are considered non-isolated. Representative dominant vegetation within the wetlands consisted of red alder, Western red cedar, Pacific dogwood, vine maple in the tree stratum; Nootka rose, cottonwood, Pacific willow in the sapling/shrub stratum; and cattails, jewelweed, Oregon iris, Soft rush, tufted hairgrass, reed canarygrass, velvet grass, monkeyflower, horsetail, slough sedge, spike rush, Lady's thumb, birdsfoot trefoil, nettle, Lady fern, yellow-flag iris, dropwort, blackberry, colt's foot, one-sided sedge, and manna grass in the herbaceous stratum. The combination of these species resulted in a dominance test of greater than 50 percent, indicating that hydrophytic vegetation were dominant. Hydric soils were present and all wetlands met the hydric soil indicators for A1-Histosol, A2-Histic Epipedon, F3-Depleted Matrix, F6-Redox Dark Surface, F7-Depleted Dark Surface, or S5-Sandy Redox. Primary indicators of wetland hydrology included A1-surface water, A2-high water table, A3-saturation, and C1-Hrdrogen sulfide odor. Additionally, B10-Drainage patterns, D2-geomorphic position, C9-Saturation visible on Aerial Imagery, and D5-FAC neutral test provided secondary indicators of wetland hydrology. Considering the combination of dominant hydrophytic vegetation, hydric soils, and the presence of primary and secondary wetland hydrology indicators, these features are wetlands. A total of 5.66 acres of wetlands were delineated in the 2016 survey. The acreage of wetlands in the Project Area exceeds the project objectives of 4.8 acres of replacement wetlands and no net loss of wetlands compared to conditions before the breach of the dam. Of 13 delineated wetland areas, 12 areas totaling 0.67 acre are located within the former Northwestern Lake footprint. One wetland of 4.99 acres is located downstream of the dam site near the mouth of the White Salmon River. The Washington Natural Heritage Program identifies the presence of rare plants, species, and wetlands in the vicinity of the project area.

<u>Uplands</u>

Sample Points that did not exhibit all three (3) parameters to be considered wetlands were determined to be located in upland areas. Refer to the field data sheets provided in **Appendix A** for additional information specific to the upland conditions near each wetland. Dominant vegetation within the uplands consisted of Western red cedar in the tree stratum; Douglas fir, mountain hemlock, red alder, big leaf maple, Oregon grape, beaked hazelnut, thimbleberry, vine maple in the sapling/shrub stratum; and meadow barley, lupine, red fescue, Western yarrow, velvet grass, bird's foot trefoil, slender wheatgrass, mountain brome, nightshade, colt's foot, and reed canarygrass in the herbaceous stratum. The composition of these species resulted in a dominance test of less than 50 percent, and no hydric soil or wetland hydrology indicators were present. Considering the absence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology; these sample points are located in upland areas.

Project Need for Agency Approval and/or Permits

Final authority for acceptance and approval of the delineated wetlands will be determined by the Department of Ecology compliance requirements of Water Quality Certification Order 8049.

Final Authority for Jurisdictional Determinations

This report reflects the professional opinion of Tetra Tech and PacifiCorp biologists. Formal determination of jurisdiction regarding wetlands and waters of the United States can only be determined by the USACE with the submittal of a jurisdictional determination request by a Project Applicant. Ecology claims jurisdiction over non-USACE jurisdictional waters and isolated wetlands.

5 REFERENCES

- CH2M Hill. 2003. Condit Dam Removal Project Conceptual Revegetation Framework. Prepared for PacifiCorp Energy. Bellevue, WA.
- CH2M Hill 2008. Noxious Weed Survey and Wetland Inspection Report. Condit Hydroelectric Project FERC Project No. 2342. Prepared for PacifiCorp Energy. Bellevue, WA.
- Cowardin, L.M., V. Carter V., F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31. Washington, D.C.
- Department of Ecology. 2007. Condit Dam Removal Final SEPA Supplemental Environmental Impact Statement. Ecology Publication No. 07-06-012. Yakima, WA.
- Ebasco. 1991. Final Report Condit Hydroelectric Project FERC Project No.2342. Vegetation Mapping and Threatened and Endangered Species Inventory. Prepared for PacifiCorp Energy Electric Operations by Ebasco Environmental, Bellevue, WA.
- Kleinfelder. 2013. Wetland Assessment Report 2013. Prepared for PacifiCorp Energy by Kleinfelder, Portland, OR.
- Kleinfelder. 2014. Wetlands and Waters of the U.S. and Washington State Delineation Report. Prepared for PacifiCorp Energy by Kleinfelder, Portland, OR.
- Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. Western Mountains, Valleys, and Coast 2014 Regional Wetland Plant List. ERDC/CRREL Phytoneuron 2014-41: 1-42. U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. Hanover, NH.
- Munsell Color. 2009. Munsell Soil-Color Charts, 2009 Edition. Grand Rapids, MI.
- PacifiCorp Energy. 2004. Project Description. Condit Hydroelectric Project FERC Project No.2342.
- PacifiCorp Energy. 2011. Revegetation and Wetlands Management Plan. Condit Hydroelectric Project Decommissioning FERC Project No. 2342.
- U.S. Army Corps of Engineers Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. NTIS No. AD A176 912. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).
 ERDC/EL TR-10-3. U.S. Army Engineer Research and Development Center. Vicksburg, MS.

- U.S. Department of Agriculture. 2014 Natural Resource Conservation Service; Plants Database. <u>http://plants.usda.gov/</u>.
- U.S. Department of Agriculture. Natural Resource Conservation Service. 2014. Interactive Web Soil Survey. Accessed online August 2016: <u>http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</u>.
- U.S. Fish and Wildlife Service (USFWS). 2014. National Wetlands Inventory (NWI). Accessed online August 2014: <u>http://www.fws.gov/wetlands/Data/Mapper.html</u>
- U.S. Geological Service (USGS). 1983. Northwestern Lake and Hood River 7.5 Topographic Quadrangle. 1:24,000.

Appendix A – Wetland Data Sheets

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

-

Project/Site: _ CondiT		City/County:	flickilat	
Applicant/Owner: PacifiC				A Sampling Point: W-60
Investigator(s): B. HorTon	S. Caraan	a_ Section, Townsh	hip, Range: <u>S2-T</u>	3N-BIDE
Landform (hillslope, terrace, etc.): H	illslope	Local relief (cor	ncave, convex, none): C.C	Slope (%): ~1%
Subregion (LRR):A	La	tt. <u>45.7769</u>	62 Long: -121	521857 Datum: 1VAD83
Soil Map Unit Name: 92 - Ha	sum gravely	ashy Loar	n NWI di	assification: _PFO
Are climatic / hydrologic conditions on	the site Gpical for this time	e of year? Yes <u>}</u>	No (If no, explai	n in Remarks.)
Are Vegetation, Soil, o	r Hydrology signifi	cantly disturbed?	Are "Normal Circumstan	ces" present? Yes X No
Are Vegetation, Soil, o	r Hydrology natura	ally problematic?	(If needed, explain any a	
SUMMARY OF FINDINGS -	Attach site map sho	wing sampling p	oint locations, trans	ects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X Yes X Yes X	No No No	Is the Sampled Area within a Wetland?	Yes X	No
Remarks: In Fhuence	d by	a harge	persistent	seep	uphill

VEGETATION - Use scientific names of plants.

	Absolute	Dominant		Dominance Test worksheet:		
Tree Stratum (Plot size: r=36)		Species?		Number of Dominant Species	.3	(4)
	20	_1	FUC	That Are OBL, FACW, or FAC:		(A)
2 3				Total Number of Dominant Species Across All Strata:	3	(B)
4		= Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet		
1				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 =	200
Herb Stratum (Plot size: Y=5)		= Total Co	ver	UPL species		
1. Impatiens capensis	90	4	FACW	Column Totals:	(A)	_ (B)
2. Stathys cooleyae	20	4	FACW	Prevalence Index = B/A	-	
3/				Hydrophytic Vegetation India		
4				1 - Rapid Test for Hydroph	nytic Vegetation	
5				2 - Dominance Test is >50)%	
6				3 - Prevalence Index is ≤3	.01	
7			<u> </u>	4 - Morphological Adaptat data in Remarks or on	ions ¹ (Provide sup a separate sheet)	oporting
8				5 - Wetland Non-Vascular		
9				Problematic Hydrophytic \		ain)
10		<u> </u>		¹ Indicators of hydric soil and w		
11				be present, unless disturbed o		
Woody Vine Stratum (Plot size:)		= Total Co	ver			
1				Hydrophytic		
2.				Vegetation		
		= Total Co	ver	Present? Yes X	No	
% Bare Ground in Herb Stratum						
Remarks: Same vegetation is still very Eash de	cor espite	nmni 2 ha	Ty a Te se	s 2014 Sarvey eason Sile inv	vegeto estigat.	Tion

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

SOIL

20

Profile Description: (Describe to th			confirm the abser	nce of indicators.	.)
Depth Matrix (inches) Color (moist)	% Color (moist)	% Type1	Loc ² Texture	S	Remarks
11 110 1	>0				- mucky
					.,
			(<u></u>		
¹ Type: C=Concentration, D=Depletion	n RM=Reduced Matrix CS=C	overed or Coated S	Sand Grains.	Location: PL=Po	re Lining, M=Matrix.
Hydric Soil Indicators: (Applicable					matic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)		_ 1	2 cm Muck (A10)	
X Histic Epipedon (A2)	Stripped Matrix (Se			Red Parent Materi	
Black Histic (A3)	Loamy Mucky Mine			Very Shallow Dark	
Hydrogen Sulfide (A4)	Loamy Gleyed Mat		- "	Other (Explain in F	Remarks)
 Depleted Below Dark Surface (A Thick Dark Surface (A12) 	11) Depleted Matrix (F Redox Dark Surfac		³ Indi	cators of hydrophy	tic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Sur			etland hydrology r	
Sandy Gleyed Matrix (S4)	Redox Depression			nless disturbed or	
Restrictive Layer (if present):					
Туре:					and the second second
Depth (inches):			Hydric S	Soil Present?	res X No
	esame as	exar	iched in		
HYDROLOGY Wetland Hydrology Indicators:		exam			
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one re	equired; check all that apply)		<u>S</u> e	econdary Indicato	rs (2 or more required)
IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one remains) X Surface Water (A1)	equired; check all that apply) Water-Stainer	d Leaves (B9) (exc	<u>S</u> e	econdary Indicator	rs (2 or more required) Leaves (B9) (MLRA 1, 2,
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one regime) X Surface Water (A1) High Water Table (A2)	equired; check all that apply) Water-Staine MLRA 1, 2	d Leaves (B9) (exc 2, 4A, and 4B)	<u>S</u> e	econdary Indicator _ Water-Stained 4A, and 4B)	r <u>s (2 or more required)</u> Leaves (B9) (MLRA 1, 2,
IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one regimer) X Surface Water (A1) High Water Table (A2) X Saturation (A3)	equired; check all that apply) Water-Stained MLRA 1, 2 Salt Crust (B ²	d Leaves (B9) (exc 2, 4A, and 4B) 1)	<u>S</u> e	econdary Indicator	r <u>s (2 or more required)</u> Leaves (B9) (MLRA 1, 2, rns (B10)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one red) X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1)	equired; check all that apply) Water-Stainee MLRA 1, 2 Salt Crust (B' Aquatic Invert	d Leaves (B9) (exc 2, 4A, and 4B)	<u>S</u> e	econdary Indicator Water-Stained 4A, and 4B) Drainage Patter Dry-Season Wa	r <u>s (2 or more required)</u> Leaves (B9) (MLRA 1, 2, rns (B10)
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HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one reference) X Surface Water (A1) High Water Table (A2) X 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 Imag Sparsely Vegetated Concave Su Field Observations: Surface Water Present? Yes _ Water Table Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _	equired; check all that apply) — Water-Stainer MLRA 1, 2 — Salt Crust (B ² — Aquatic Invent — Hydrogen Sul — Oxidized Rhiz — Presence of F — Recent Iron F — Stunted or St rface (B8) X No Depth (incher No Depth (incher No Depth (incher	d Leaves (B9) (exc 2, 4A, and 4B) 1) rebrates (B13) fide Odor (C1) cospheres along Liv Reduced Iron (C4) ressed Plants (D1) n in Remarks) s):	ept ving Roots (C3) Soils (C6) (LRR A) Wetland Hydro	econdary Indicator Water-Stained I 4A, and 4B) Drainage Patter Dry-Season Wa Saturation Visit Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mon Frost-Heave Hu	rs (2 or more required) Leaves (B9) (MLRA 1, 2, rns (B10) ater Table (C2) ole on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A)
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IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one reference) X Surface Water (A1) High Water Table (A2) X 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 Imag Sparsely Vegetated Concave Sur Field Observations: Surface Water Present? Yes _ Water Table Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Mater Table Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Includes capillary fringe) Describe Recorded Data (stream gau	equired; check all that apply) — Water-Stainer MLRA 1, 2 — Salt Crust (B' — Aquatic Invert — Hydrogen Sul — Oxidized Rhiz — Presence of F — Recent Iron F — Stunted or St Herry (B7) — Other (Explain rface (B8) X No Depth (incher No Depth (incher)	d Leaves (B9) (exc 2, 4A, and 4B) 1) rebrates (B13) fide Odor (C1) respheres along Liv Reduced Iron (C4) reduction in Tilled S ressed Plants (D1) in in Remarks) (S):	ept	econdary Indicator Water-Stained Drainage Patter Dry-Season Wa Saturation Visit Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou Frost-Heave Hu	rs (2 or more required) Leaves (B9) (MLRA 1, 2, rns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes X No
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference) X Surface Water (A1) High Water Table (A2) X 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 Imag Sparsely Vegetated Concave Sur Field Observations: Surface Water Present? Yes_ Saturation Present? Yes_ Cincludes capillary fringe) Describe Recorded Data (stream gau	equired; check all that apply) — Water-Stainer MLRA 1, 2 — Salt Crust (B' — Aquatic Invert — Hydrogen Sul — Oxidized Rhiz — Presence of F — Recent Iron F — Stunted or St Herry (B7) — Other (Explain rface (B8) X No Depth (incher No Depth (incher)	d Leaves (B9) (exc 2, 4A, and 4B) 1) rebrates (B13) fide Odor (C1) respheres along Liv Reduced Iron (C4) reduction in Tilled S ressed Plants (D1) in in Remarks) (S):	ept	econdary Indicator Water-Stained Drainage Patter Dry-Season Wa Saturation Visit Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou Frost-Heave Hu	rs (2 or more required) Leaves (B9) (MLRA 1, 2, rns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes X No
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one reference) X Surface Water (A1) High Water Table (A2) X 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 Imag Sparsely Vegetated Concave Sur Field Observations: Surface Water Present? Yes _ Water Table Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Mater Table Present? Yes _ Mater Table Present? Yes _ Saturation Present? Yes _ Gincludes capillary fringe) Describe Recorded Data (stream gau	equired; check all that apply) — Water-Stainer MLRA 1, 2 — Salt Crust (B ² — Aquatic Inveri — Hydrogen Sui — Oxidized Rhiz — Presence of F — Recent Iron F — Stunted or Str rface (B8) X_No Depth (incher X_No STAN& X_NO Depth (incher X_No STAN& X_NO Depth (incher X_No STAN& X_NO STAN& X_NO STAN & X_NO & X_	d Leaves (B9) (exc 2, 4A, and 4B) 1) rebrates (B13) fide Odor (C1) respheres along Liv Reduced Iron (C4) reduction in Tilled S ressed Plants (D1) in in Remarks) (S):	ept	econdary Indicator Water-Stained Drainage Patter Dry-Season Wa Saturation Visit Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou Frost-Heave Hu	rs (2 or more required) Leaves (B9) (MLRA 1, 2, rns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) ost (D5) unds (D6) (LRR A) ummocks (D7) Yes X No

WETLAND DETERMINATION DATA	FORM - Western	Mountains, Valle	eys, and Coast Region

Project/Site:	ond	iT	City/County:		Sampling Date: 7/21/16
Applicant/Owner:	Pacif	Corp		State: WA	Sampling Point: W-6b
Investigator(s):	. Hor	Ton S.Ca	-uana_ Section, Town	ship, Range: <u>S2-T</u> 3	SN-RIDE
Landform (hillslope,	, terrace, etc): Terrace	Local relief (c	oncave, convex, none): <u>CO</u>	ncave Slope (%): ~1%
			Lat: 45.776		
Soil Map Unit Name	92	Husum gr	avelly ashy loa	m NWI clas	sification: PFo
Are climatic / hydrol	logic condition	ons on the site typical f	or this time of year? Yes X	No (If no, explain	in Remarks.)
Are Vegetation	_, Soil	, or Hydrology	significantly disturbed?	Are "Normal Circumstance	es" present? Yes X No
Are Vegetation	, Soil	, or Hydrology	naturally problematic?	(If needed, explain any an	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Remarks:			

VEGETATION – Use scientific names of plants.

	Absolute	Dominant Indica		
Tree Stratum (Plot size: r= 30')		Species? Statu	I Number of Dominant Species	
1. Alnus rubra	40	Y FA	C That Are OBL, FACW, or FAC	(A)
2. Cornus nuttalli	_5	FAC	Total Number of Dominant	2
3. Acer circinatum	5	FA	Species Across All Strata:	<u>3</u> (B)
4. Thuja phicoTa	.5	E	¥	
	55	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC	100 (A/B)
Sapling/Shrub Stratum (Plot size:)			Prevalence Index worksheet	(,
1			Total % Cover of:	A CONTRACTOR OF
2	<u></u>		OBL species	
3			FACW species	
4			FAC species	
5			FACU species	
		= Total Cover	UPL species	
Herb Stratum (Plot size: r=5)				
1. Impatiens capensis	40	Y FA		(A) (B)
2. Tris pseudocanus	15	0	Fievalence midex - bix	=
3. AnThyrium Filix-temin				cators:
4. Oendn The sar men Tosa	120	Y 01	1 - Rapid Test for Hydroph	nytic Vegetation
5				1%
6				
7			4 - Morphological Adaptat	ions ¹ (Provide supporting
8			data in Remarks or on	a separate sheet)
9			5 - Wetland Non-Vascular	Plants ¹
10			Problematic Hydrophytic \	/egetation ¹ (Explain)
11	1		¹ Indicators of hydric soil and w	etland hydrology must
	RC	= Total Cover	be present, unless disturbed o	r problematic.
Woody Vine Stratum (Plot size:)	65_			
1			Hydrophytic	
2			Vegetation	
		= Total Cover	Present? Yes X	No
% Bare Ground in Herb Stratum	1.00			
Remarks:				
6				

SOIL

Sampling Point: W-66

Depth <u>Matrix</u> (inches) Color (moist)		그럼 안전 방법에 걸었다. 알았는 것이 안전 것이 하는 것이다.	onfirm the absence of indicators.)
		<u> Redox Features</u> Color (moist) % <u>Type</u> Lo	c ² Texture Remarks
<u>0-20 104R2</u>			Siltyclayloam - mucky
Hydric Soil Indicators: (App Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Depleted Below Dark Sur Thick Dark Surface (A12) Sandy Mucky Mineral (S1	face (A11)	=Reduced Matrix, CS=Covered or Coated Sa LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F1) (except MLF Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7)	Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present,
_ Sandy Gleyed Matrix (S4		Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present Type: Depth (inches):			Hydric Soil Present? Yes X No
YDROLOGY Wetland Hydrology Indicato		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
Primary Indicators (minimum)	of one require		Secondary Indicators (2 or more required)
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 Aer Sparsely Vegetated Cond			water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Mg Roots (C3) Age Geomorphic Position (D2) Shallow Aquitard (D3) ills (C6)
 X 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 Aer Sparsely Vegetated Cond Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) 	Yes X Yes X Yes X Yes X	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L 37) Other (Explain in Remarks) (B8) No Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Mag Roots (C3) Ceomorphic Position (D2) Shallow Aquitard (D3) ils (C6) FAC-Neutral Test (D5) RR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No
X 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 Aer Sparsely Vegetated Cond Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes X Yes X Yes X Yes X	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sot Stunted or Stressed Plants (D1) (L 37) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Mag Roots (C3) Ceomorphic Position (D2) Shallow Aquitard (D3) ils (C6) FAC-Neutral Test (D5) RR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No

	JATA PORM - We		ntains, Valleys, and Coast Region
oject/Site: CondiT	City/Coun	ty: Klic	KITAT Sampling Date: 7/21/1
plicant/Owner: Pacificorp			State: WA Sampling Point: W6a, b
estigator(s): S. Caruana, B.	forton Section, 7	ownship, Ra	nge: S2-T3N-RIOF
			convex, none): Concase_ Slope (%): </td
			Long: 121 . 522112 Datum: NAD
			NWI classification:
e climatic / hydrologic conditions on the site typical for			
			"Normal Circumstances" present? Yes X No
Vegetation, Soil, or Hydrology Vegetation, Soil, or Hydrology			
JMMARY OF FINDINGS – Attach site ma	p showing sampli	ng point le	ocations, transects, important features, et
ydrophytic Vegetation Present? Yes			
ydric Soil Present? Yes	NO	the Sampled thin a Wetlar	
Vetland Hydrology Present? Yes			/
emarks: Plot is Located b	eTween TI	heTw	o wethands on The
uphand vise Seeps	hocated o	opithe	side supply hoth
uphand vise. Seeps EGETATION - Use scientific names of pla	ante (D)	eTLav	1:60976
COLTATION - Ose scientific names of ph		nt Indicator	Dominance Test worksheet:
ree Stratum (Plot size: 1= 30')	<u>% Cover</u> Species		Number of Dominant Species
Thuja plicata	50 Y	FAC	That Are OBL, FACW, or FAC: (A)
N			Total Number of Dominant
			Species Across All Strata: (B)
·			Percent of Dominant Species
apling/Shrub Stratum (Plot size: <u>Y = 15</u>)	_ <u>50</u> = Total C	Cover	That Are OBL, FACW, or FAC: <u>70</u> (A/E
Acer macrophyllum	15 4	FACU	Prevalence Index worksheet:
			Total % Cover of: Multiply by: OBL species x 1 =
			FACW species x 2 =
			FAC species x 3 =
			FACU species x 4 =
erb Stratum (Plot size: r=5)	= Total C	Cover	UPL species x 5 =
Solan un ameriano	in 40 4	FALL	Column Totals: (A) (B)
Impatiens capensis	20 4	FACE	Prevalence Index = B/A =
Rubus Armehiacus	16	FACE	Hydrophytic Vegetation Indicators:
Acer macrophyllum	20 4	FACU	1 - Rapid Test for Hydrophytic Vegetation
1 /			2 - Dominance Test is >50%
			3 - Prevalence Index is ≤3.0 ¹
			4 - Morphological Adaptations ¹ (Provide supportin
			data in Remarks or on a separate sheet)
·			5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain)
0		_	¹ Indicators of hydric soil and wetland hydrology must
1			be present, unless disturbed or problematic.
Voody Vine Stratum (Plot size:)	= Total C	over	
	<u></u>	<u> </u>	Hydrophytic
			Vegetation
·			Present? Yes No X

US Army Corps of Engineers

Depth	ription: (Describe t	o the dept	n needed to document the indicator or confirm	the absence of	of indicators.)
(inches)	Matrix		Peday Features		
(11101100)	Color (moist)		Color (moist) % Type ¹ Loc ²		Remarks
0-16	104K 3/2	100		Loam	
	A. 1. 1. 1. 1.	1.1.1			
		÷			
					<u> </u>
Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, CS=Covered or Coated Sand Gra		ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applica	able to all L	.RRs, unless otherwise noted.)	Indicator	rs for Problematic Hydric Soils ³ :
Histosol			Sandy Redox (S5)		Muck (A10)
	pipedon (A2)		Stripped Matrix (S6)		Parent Material (TF2) Shallow Dark Surface (TF12)
	istic (A3)		Loamy Mucky Mineral (F1) (except MLRA 1) Loamy Gleyed Matrix (F2)		er (Explain in Remarks)
	en Sulfide (A4) d Below Dark Surface	(A11)	Depleted Matrix (F3)		<u></u>
	ark Surface (A12)		Redox Dark Surface (F6)	³ Indicato	rs of hydrophytic vegetation and
	Aucky Mineral (S1)		Depleted Dark Surface (F7)		nd hydrology must be present,
Sandy G	Gleyed Matrix (S4)		Redox Depressions (F8)	unles	s disturbed or problematic.
YDROLO	GY	-			
Wetland Hy	drology Indicators:		; check all that apply)	Secor	ndary Indicators (2 or more required)
Primary Indi	drology Indicators: cators (minimum of o		; check all that apply) Water-Stained Leaves (B9) (except		ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary India Surface	drology Indicators:				
Wetland Hy Primary India Surface	drology Indicators: cators (minimum of o Water (A1) ater Table (A2)		Water-Stained Leaves (B9) (except	v	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10)
Wetland Hy Primary India Surface High Wa	drology Indicators: cators (minimum of o Water (A1) ater Table (A2)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)		Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2)
Wetland Hy Primary India Surface High Wa Saturati Water M	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) ion (A3)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)		Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Trainage Patterns (B10) Try-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift De	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3)		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 Roc	W D D S ots (C3) G	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rrainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift De Algal Ma	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		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 Roc Presence of Reduced Iron (C4)	W D D S S S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rrainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6)	W D D S S S S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irainage Patterns (B10) Iny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) ecomorphic Position (D2) Inallow Aquitard (D3) AC-Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Algal Ma Iron Del Surface	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6)	ne required	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A)	W D D S S S F R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) my-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water N Sedime Drift De Algal Ma Surface Iron De Inundati	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial I	me required	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	W D D S S S F R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irainage Patterns (B10) Iny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) ecomorphic Position (D2) Inallow Aquitard (D3) AC-Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Algal Ma Iron Deg Surface Inundat Sparsel	drology Indicators: <u>cators (minimum of o</u> Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial I ly Vegetated Concave	me required	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	W D D S S S F R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) my-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De Surface Inundat Sparsel Field Obser	drology Indicators: <u>cators (minimum of o</u> Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial I ly Vegetated Concave rvations:	ine required Imagery (B7 e Surface (I	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) 88)	W D D S S S F R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) my-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De Surface Inundat Field Observer	drology Indicators: <u>cators (minimum of o</u> Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial I ly Vegetated Concave rvations: ter Present? Y	ine required Imagery (B7 e Surface (f	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks) 38)	W D D S S S F R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) my-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De Surface Inundat Field Obsen Surface Wa Water Table	drology Indicators: <u>cators (minimum of o</u> Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial I ly Vegetated Concave rvations: ter Present? Y	Imagery (B7 e Surface (B 'es	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks) 38) No X Depth (inches): 216 ¹¹ Depth (inches): 216 ¹¹ Depth (inches): 216 ¹¹	W D D S S S F F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rrainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Wa Saturati Water N Sedime Drift De Algal Ma Iron De Surface Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca	drology Indicators: <u>cators (minimum of o</u> Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial I ly Vegetated Concave rvations: ter Present? Y Present? Y Present? Y positary fringe)	Imagery (B7 e Surface (I fes 1 fes 1	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks) 88) No X Depth (inches): <u>716''</u> Depth (inches): <u>716''</u> Weth		Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) my-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water N Sedime Drift De Algal Ma Iron De Surface Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca	drology Indicators: <u>cators (minimum of o</u> Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial I ly Vegetated Concave rvations: ter Present? Y Present? Y Present? Y positary fringe)	Imagery (B7 e Surface (I fes 1 fes 1	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks) 38) No X Depth (inches): 216 ¹¹ Depth (inches): 216 ¹¹ Depth (inches): 216 ¹¹		Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rrainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Wa Saturati Water N Sedime Drift De Algal Ma Iron De Surface Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca	drology Indicators: <u>cators (minimum of o</u> Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial I ly Vegetated Concave rvations: ter Present? Y Present? Y Present? Y positary fringe)	Imagery (B7 e Surface (I fes 1 fes 1	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 Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks) 88) No X Depth (inches): <u>716''</u> Depth (inches): <u>716''</u> Weth		Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rrainage Patterns (B10) my-Season Water Table (C2) aturation Visible on Aerial Imageny (C9) seomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)

					ntains, Valleys, and Coast Region
roject/Site:	Condit		City/(County: SKa	mania_ Sampling Date: 7/201
policant/Own	er PacifiC	orp			State: WA Sampling Point: 00-9
vestinator(s)	B. Horton	S. Caro	Lana Sect	on, Township, Rar	198: 52-73N-RIOE
ndform (hills	long tarrace etc.): H	illshope	Loca	al relief (concave, c	convex, none): <u>Concave</u> Slope (%): <u>10</u>
	slope, tenace, etc.). $\underline{\mu}$	Insiepe-	Lat 45	77818	Long: 121.524913 Datum: NAD&
bregion (LR	(R):	. 1	Lat. and	T	NWI classification:PEM
					(If no, explain in Remarks.)
	n <u>N</u> , Soil <u>Y</u> , or				Normal Circumstances" present? Yes X No
e Vegetation	N, Soil N , or	Hydrology <u>N</u> n	aturally problem	atic? (If ne	eded, explain any answers in Remarks.)
JMMARY	OF FINDINGS - A	ttach site map	showing sar	npling point lo	ocations, transects, important features, etc
	Vegetation Present?	Yes X N			
lydric Soil F		Yes X N		Is the Sampled	Area
	trology Present?	Yes X N		within a Wetlan	nd? Yes X No
				Tindne	raine budnalan Fran
K	iemnani pori	ion of th	inge w	er hand to	eceives hydrology From
epgra	dient runof	<i>i</i> and spri	ings. Ar	ea is sti	11 struvated Late in The season
	ON – Use scientific				
<u></u>	All and a lot of the lot of the			minant Indicator	Dominance Test worksheet:
ree Stratun	n (Plot size:)	% Cover Sp	ecies? Status	Number of Dominant Species
					That Are OBL, FACW, or FAC: (A)
-					Total Number of Dominant
					Species Across All Strata: (B)
					Percent of Dominant Species
anling/Shr	ub Stratum (Plot size:		=T	otal Cover	That Are OBL, FACW, or FAC: 200 (A/B)
	ub Stratum (Plot size				Prevalence Index worksheet:
				-	Total % Cover of:Multiply by:
					OBL species x 1 =
-					FACW species x 2 =
					FAC species x 3 = FACU species x 4 =
1.00	A Charles	1.1	= T	otal Cover	UPL species x 5 =
lerb Stratur	m (Plot size:)	-	, EAGA	OPL species X 3 Column Totals: (A) (B)
Im	patiens c	apensis		FACE	
Pha	havis around	inacea		1 FACLO	Prevalence Index = B/A =
					Hydrophytic Vegetation Indicators:
-					1 - Rapid Test for Hydrophytic Vegetation
					X 2 - Dominance Test is >50%
					 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹
					 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting)
 				==	 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supportindata in Remarks or on a separate sheet)
i i i i					 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting)
· · · 0					 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supportind 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
· · · 0					 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supportindata in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ (Explain)
 0 1					 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supportindata in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must
i i i i i i i i voody Vine)		otal Cover	 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supportind 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
5 5 9 0 11 Woody Vine	e Stratum (Plot size:)		otal Cover	 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supportindata 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.
5 5 7 3 9 10 10 11 Woody Vine 1 2	e Stratum (Plot size:)		otal Cover	 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supportindata 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

6.7

SOIL

Sampling Point: <u>W-9</u>

Profile Description: (Describe to the de	epth needed to document the indicator or confirm	the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-6 104R 3/3 100		SandyLoain
6-20 104R 3/2 20	D m	Sandy Loam
	2.5484/8 40 C m	SandyLoam
10 IN 1/2 00		Schalysouri
	· · · · · · · · · · · · · · · · · · ·	
Hydric Soil Indicators: (Applicable to a	M=Reduced Matrix, CS=Covered or Coated Sand Gr.	ains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
	그는 그는 것은 것이 아이지 않는 것이 같이 같이 했다.	
Left Histosol (A1) Left Histic Epipedon (A2)	Sandy Redox (S5) Stripped Matrix (S6)	2 cm Muck (A10) Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Z Depleted Matrix (F3)	=
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		And the second
Depth (inches):		Hydric Soil Present? Yes X No
Remarks:	it redoximorphic feat	Final
HYDROLOGY Wetland Hydrology Indicators:		
	ed; check all that apply)	Secondary Indicators (2 or more required)
Wetland Hydrology Indicators:		
Wetland Hydrology Indicators: Primary Indicators (minimum of one require	red; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required in the second sec	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) 	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required in the second sec	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required in the second sec	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required in the second sec	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required in the second sec	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required in the second sec	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Dother (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) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6, Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No _X Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6, Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No X Depth (inches): ? 20^{31} No X Depth (inches): ? 20^{31}	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes _ No
Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes _ No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7)Other (Explain in Remarks) (B8) No _X Depth (inches): No _X Depth (inches) = No _X Depth (inches) = No _X Depth (inches) =	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6, Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No X Depth (inches): ? 20^{31} No X Depth (inches): ? 20^{31}	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

roject/Site: CondiT	City/County: SKa	mania_ Sampling Date: 7/20/1
pplicant/Owner: PacifiCorp		State: WA Sampling Point: W-9-46
vestigator(s): B. Horton, S. Caraan	C Section, Township, Ra	ange: 52 - T3N - RIDE
Indform (hillslope, terrace, etc.): Hillslope	Local relief (concave,	convex. none): None Slope (%): 59
ubregion (LRR):AI		
il Map Unit Name: Unmapped - reservoi		
e climatic / hydrologic conditions on the site typical for this tir		
e Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} sign		
e Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> natu		이 것은 것은 것이 같은 것은 것을 위해 가지 않는 것은 것이 같이 많이 했다. 것은 것을 가지 않는 것이 없는 것이 없는 것이 없다. 것이 없는 것이 없다. 것이 없는 것이 없다. 것이 없는 것이 없다. 것이 없는 것이 없 않는 것이 없는 것이 않이
		eeded, explain any answers in Remarks.)
UMMARY OF FINDINGS – Attach site map sh	owing sampling point l	locations, transects, important features, etc
Hydrophytic Vegetation Present? Yes Yes No		A
Hydric Soil Present? Yes No		
Netland Hydrology Present? Yes No		
Remarks: Originally part of a Longer receives a	Fringe we	Thand Area That No
Longer receives a	n inor of	AcTus hudrohogy
EGETATION – Use scientific names of plants.	an input of	hencengalongy
	bsolute Dominant Indicator	Dominance Test worksheet:
	Cover Species? Status	Number of Dominant Species
		That Are OBL, FACW, or FAC: (A)
		Total Number of Dominant
· · · · · · · · · · · · · · · · · · ·		Species Across All Strata: (B)
·		Percent of Dominant Species
Capling/Shrub Stratum (Plot size:)	= Total Cover	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 3 =
erb Stratum (Plot size: Y= .5) -	= Total Cover	UPL species x 5 =
Phalanis arundinacea	20 Y FACW	Column Totals: (A) (B)
Hondeum brachy anTherum		
hupinus albeautis	60 4 FAC	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
		1 - Rapid Test for Hydrophytic Vegetation
		X 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)
l		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
/oody Vine Stratum (Plot size:)	= Total Cover	
·		Hydrophytic
2		Vegetation
	= Total Cover	Present? Yes X No
Bare Ground in Herb Stratum		

US Army Corps of Engineers

SOIL

11

Sampling Point: W9 upt

Depth	Matrix		Red	ox Features	len en la compañía de				
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ²	Texture	R	emarks
2-18	10 YR 3/3	<u>/00</u>			_	_	Sand		
_							<u> </u>		
	ncentration, D=Deple					d Sand Gr			Lining, M=Matrix.
<pre>_ Histosol (_ Histic Epi _ Black His</pre>	ipedon (A2)	ble to all L - -	.RRs, unless othe Sandy Redox Stripped Matri Loamy Mucky Loamy Gleyed	(S5) x (S6) Mineral (F1)		MLRA 1)	2 cm Red Very	s for Problema Muck (A10) Parent Material Shallow Dark Si r (Explain in Rer	urface (TF12)
_ Thick Dar _ Sandy Mr	Below Dark Surface rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	(A11)	 Depleted Matr Redox Dark So Depleted Dark Redox Depres 	urface (F6) Surface (F7))		wetlan	s of hydrophytic d hydrology mu disturbed or pro	st be present,
	ayer (if present):								a de la contra
Type:			_				Concerned and		
	hoel						Hydric Soil	Present? Yes	No_X
6	raded	reso	enuoin t	−ill m	nati	e ría			
/DROLOG	raded				nati	e ria	1	dary Indicators ()	2 or more required)
YDROLOG Vetland Hyd rimary Indica Surface V	-raded, GY rology Indicators:		check all that app Water-Sta		s (B9) (e)		l Secon		2 or more required) Ives (B9) (MLRA 1, 2
YDROLOG YDROLOG Vetland Hyd Yrimary Indica Surface V High Wate Saturation	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3)		check all that app Water-Sta	oly) ained Leaves a 1, 2, 4A, an	s (B9) (e)		 <u>Secon</u>	ater-Stained Lea	ives (B9) (MLRA 1, 2
VDROLOG Vetland Hyd rimary Indica Surface V High Wate Saturation Water Ma	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1)		check all that app Water-Sta Salt Crus Salt Crus Aquatic Ir	ained Leaves 1, 2, 4A, an t (B11) nvertebrates (; (B9) (e) d 4B) (B13)		 <u>Secon</u> Wi Dr Dr	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water	ives (B9) (MLRA 1, 2 (B10) Table (C2)
Vetland Hyd Vetland Hyd Irimary Indica Surface V High Wate Saturation Water Ma Sediment	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2)		<u>check all that app</u> Water-Sta Salt Crus Salt Crus Aquatic Ir Hydroger	ained Leaves 1, 2, 4A, an t (B11) nvertebrates a Sulfide Odo	s (B9) (e) d 4B) (B13) or (C1)	ccept	 <u>Secon</u> Wi Dr Dr Dr Sa	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible	ives (B9) (MLRA 1, 2 (B10) Table (C2) on Aerial Imagery (CS
Verland Hyd Vetland Hyd rimary Indica Surface V High Wate Saturation Water Ma Sediment Drift Depo	GY rology Indicators: ators (minimum of on Vater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3)		<u>check all that app</u> Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized	ained Leaves 1, 2, 4A, an t (B11) nvertebrates a Sulfide Odo Rhizosphere	6 (B9) (ex d 4B) (B13) or (C1) s along l	ccept	I <u>Secon</u> W Dr Dr Sa ts (C3) Ge	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi	(B10) Table (C2) on Aerial Imagery (C9) on (D2)
VDROLOC Vetland Hyd rimary Indica Surface V High Wate Saturation Vater Ma Sediment Sediment Drift Depo	GY rology Indicators: ators (minimum of on Water (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of a Sulfide Odo Rhizosphere of Reduced	(B9) (e) d 4B) (B13) or (C1) s along I Iron (C4	ccept _iving Roo)	Secon Secon W D D D S S ts (C3)S	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard ((B10) Table (C2) on Aerial Imagery (C9 00 (D2) D3)
Verland Hyd Verland Hyd Verland Hyd Saturation Saturation Vater Ma Sediment Sediment Algal Mat Iron Depo	GY rology Indicators: ators (minimum of on Water (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	ained Leaves 1, 2, 4A, an t (B11) nvertebrates a Sulfide Odo Rhizosphere	6 (B9) (e) d 4B) (B13) or (C1) s along I Iron (C4 o in Tilleo	ccept _iving Roo) I Soils (C6	Second Second	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi	(B10) Table (C2) on Aerial Imagery (C9 on (D2) D3) (D5)
Verland Hyd Verland Hyd Verland Hyd Verland Hyd Verland Hyd Vater Ma Saturation Vater Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation	GY rology Indicators: ators (minimum of on Water (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	e required; nagery (B7)	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leaves 1, 2, 4A, an t (B11) nvertebrates a Sulfide Odo Rhizosphere of Reduced on Reduction	(B9) (e) d 4B) (B13) or (C1) s along I Iron (C4 n in Tillec lants (D'	ccept _iving Roo) I Soils (C6	Secon Secon W Dr Dr Dr Sa ts (C3) Ge Sh FA	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (I C-Neutral Test	(B10) Table (C2) on Aerial Imagery (C9 on (D2) D3) (D5) s (D6) (LRR A)
Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Surface V High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4) posits (B5) Goil Cracks (B6) n Visible on Aerial In Vegetated Concave	e required; nagery (B7)	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leaves 1, 2, 4A, an t (B11) nvertebrates a Sulfide Odo Rhizosphere of Reduced on Reduction ar Stressed P	(B9) (e) d 4B) (B13) or (C1) s along I Iron (C4 n in Tilleo lants (D ⁻ iarks)	ccept _iving Roo) I Soils (C6 I) (LRR A)	Secon Secon W Dr Dr Dr Sa ts (C3) Ge Sh FA	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound	(B10) Table (C2) on Aerial Imagery (C4 on (D2) D3) (D5) s (D6) (LRR A)
YDROLOG YDROLOG Yetland Hyd Yimary Indica Surface V High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial In Vegetated Concave ations:	e required; nagery (B7) Surface (B	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of Sulfide Odo Rhizosphere of Reduced on Reduction or Stressed P splain in Rem mches):	(B9) (e) d 4B) (B13) or (C1) s along I Iron (C4 n in Tillec lants (D' lants (D' larks)	ccept Living Roo) I Soils (C6 I) (LRR A)	Secon Secon W Dr Dr Dr Sa ts (C3) Ge Sh FA	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound	(B10) Table (C2) on Aerial Imagery (C9 on (D2) D3) (D5) s (D6) (LRR A)
YDROLOG YDROLOG Yetland Hyd Yetland Hyd Yetland Hyd Surface V High Wate Saturation Water Ma Sediment Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Surface Water	GY rology Indicators: ators (minimum of on Water (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial In Vegetated Concave ations: r Present? Ye	e required; nagery (B7) Surface (B s N s N	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex 8) o X Depth (ir o Y Depth (ir	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of a Sulfide Odo Rhizosphere of Reduced on Reduction or Stressed Pl splain in Rem mches):	(B9) (e) d 4B) (B13) or (C1) s along I Iron (C4 n in Tilleo lants (D ⁻ iarks)	ccept Living Roo) I Soils (C6 I) (LRR A)	Secon Secon W Dr Dr Dr Sa ts (C3) Ge Sh FA	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound	(B10) Table (C2) on Aerial Imagery (C9 on (D2) D3) (D5) s (D6) (LRR A)
YDROLOG YDROLOG Yetland Hyd Yimary Indica Surface V High Wate Saturation Water Ma Sediment Orift Depo Algal Mat Iron Depo Surface S Inundation Sparsely ield Observation Vater Table Fisaturation Pre-	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) to cr crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial In Vegetated Concave ations: r Present? Ye esent? Ye	e required; nagery (B7) Surface (B s N s N	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o Other (Ex 8)	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of a Sulfide Odo Rhizosphere of Reduced on Reduction or Stressed Pl splain in Rem mches):	(B9) (e) d 4B) (B13) or (C1) s along I Iron (C4 n in Tillec lants (D' lants (D' larks)	ccept Living Roo) I Soils (C6 I) (LRR A)	Second Second	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound	(B10) Table (C2) on Aerial Imagery (C9 on (D2) D3) (D5) s (D6) (LRR A) nocks (D7)
YDROLOG YDROLOG Yetland Hyd Yetland Hyd Yetland Hyd Surface V High Wate Saturation Water Ma Sediment Sediment Algal Mat Iron Depo Surface S Inundation Sparsely ield Observater Vater Table F aturation Pre- ncludes capi	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) to cr crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial In Vegetated Concave ations: r Present? Ye esent? Ye	e required; hagery (B7) Surface (B s N s N s N	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Irr Stunted co Other (Ex 8) o Depth (ir o Depth (ir o Depth (ir	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of a Sulfide Odo Rhizosphere of Reduced on Reduction or Stressed Pl splain in Rem nches): nches):	(B9) (e) (d 4B) (B13) (B13) (B13) (C1) s along I Iron (C4 n in Tillec lants (D' arks) (B) (B) (C4 n Tillec (C4 n Tillec (C4) (Living Roo) I Soils (C6 I) (LRR A)	Second Second	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound ost-Heave Humr	(B10) Table (C2) on Aerial Imagery (C3 on (D2) D3) (D5) s (D6) (LRR A) nocks (D7)
Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vater Ma Saturation Vater Ma Sediment Drift Depo Surface S Inundation Sparsely Veter Table F Vater	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) t Orcust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial In Vegetated Concave ations: r Present? Ye essent? Ye seent? Ye llary fringe) orded Data (stream of	nagery (B7) Surface (B s N s N s N gauge, mor	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Irr Stunted co Other (Ex 8) o Depth (ir o Depth (ir o Depth (ir	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of a Sulfide Odo Rhizosphere of Reduced on Reduction or Stressed Pl splain in Rem nches): nches):	(B9) (e) (d 4B) (B13) (B13) (B13) (C1) s along I Iron (C4 n in Tillec lants (D' arks) (B) (B) (C4 n Tillec (C4 n Tillec (C4) (Living Roo) I Soils (C6 I) (LRR A)	Second Second	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound ost-Heave Humr	(B10) Table (C2) on Aerial Imagery (C3 on (D2) D3) (D5) s (D6) (LRR A) nocks (D7)
Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vater Ma Saturation Vater Ma Sediment Drift Depo Surface S Inundation Sparsely Veter Table F Vater	GY rology Indicators: ators (minimum of on Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) t Orcust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial In Vegetated Concave ations: r Present? Ye essent? Ye seent? Ye llary fringe) orded Data (stream of	nagery (B7) Surface (B s N s N s N gauge, mor	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Irr Stunted co Other (Ex 8) o Depth (ir o Depth (ir o Depth (ir	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of a Sulfide Odo Rhizosphere of Reduced on Reduction or Stressed Pl splain in Rem nches): nches):	(B9) (e) (d 4B) (B13) (B13) (B13) (C1) s along I Iron (C4 n in Tillec lants (D' arks) (B) (B) (C4 n Tillec (C4 n Tillec (C4) (Living Roo) I Soils (C6 I) (LRR A)	Second Second	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound ost-Heave Humr	(B10) Table (C2) on Aerial Imagery (C on (D2) D3) (D5) is (D6) (LRR A) nocks (D7)
Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vater Ma Saturation Vater Ma Sediment Drift Depo Surface S Inundation Sparsely Veter Table F Vater	GY rology Indicators: ators (minimum of on Water (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial In Vegetated Concave ations: r Present? Ye esent? Ye llary fringe)	nagery (B7) Surface (B s N s N s N gauge, mor	check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Irr Stunted co Other (Ex 8) o Depth (ir o Depth (ir o Depth (ir	ained Leaves 1, 2, 4A, an t (B11) nvertebrates of a Sulfide Odo Rhizosphere of Reduced on Reduction or Stressed Pl splain in Rem nches): nches):	(B9) (e) (d 4B) (B13) (B13) (B13) (C1) s along I Iron (C4 n in Tillec lants (D' arks) (B) (B) (C4 n Tillec (C4 n Tillec (C4) (Living Roo) I Soils (C6 I) (LRR A)	Second Second	ater-Stained Lea 4A, and 4B) ainage Patterns y-Season Water turation Visible comorphic Positi allow Aquitard (C-Neutral Test ised Ant Mound ost-Heave Humr	(B10) Table (C2) on Aerial Imagery (C on (D2) D3) (D5) is (D6) (LRR A) nocks (D7)

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

Project/Site: Condit	City/County: Skan	nania Samp	ling Date: 7/19/16
Applicant/Owner: PacifiCorp		_ State: WA Samp	ling Point: W-10
Investigator(s): B. HorTon, S. Caraana			
Landform (hillslope, terrace, etc.): Hillslope			
Subregion (LRR): Lat:	5. 770324 Lor	ng: 121. 53949	4 Datum: NAD 83
Soil Map Unit Name: Unmapped - reservoir 5.	ediments	NWI classification:	PFO
Are climatic / hydrologic conditions on the site typical for this time of ye		_ (If no, explain in Remarks	s.)
Are Vegetation N , Soil Y , or Hydrology N significantly		nal Circumstances" present	? Yes No
Are Vegetation $N_{,}$ Soil $N_{,}$ or Hydrology $N_{,}$ naturally pr	oblematic? (If needed	d, explain any answers in Re	emarks.)

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Remarks:			

VEGETATION - Use scientific names of plants.

TO IN

Trace Stratum (Blot size)	Absolute	Dominant Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size:) 1. <u>Alnus rubra</u>	40	Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:	_3	(A)
2 3			Total Number of Dominant Species Across All Strata:	3	(B)
4		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plot size:)			Prevalence Index worksheet:		(/
1			Total % Cover of:	Multiply by:	
2		·	OBL species		
3			FACW species		
4			FAC species		
5			FACU species		
		= Total Cover	UPL species 2		
Herb Stratum (Plot size:)			Column Totals: (
1. Impatiens capensis				~	_ (0)
2. Minulus moschatus			Prevalence Index = B/A =	-	<u> </u>
3. EquiseTum arvense			Hydrophytic Vegetation Indic	ators:	
4. Hobus LanaTus			1 - Rapid Test for Hydroph	ytic Vegetation	
5. Phahanis Arundinacea	20	4 FALL	→ 2 - Dominance Test is >50	%	
6			3 - Prevalence Index is ≤3.	01	
7			4 - Morphological Adaptatio		porting
8			data in Remarks or on a	a separate sheet)	
9			5 - Wetland Non-Vascular	Plants ¹	
10			Problematic Hydrophytic V	egetation ¹ (Expla	in)
			¹ Indicators of hydric soil and we	etland hydrology	must
11		= Total Cover	be present, unless disturbed or		
Woody Vine Stratum (Plot size:)		- Total Cover			
1			Hydrophytic		
2			Vegetation		
		= Total Cover	Present? Yes X	No	-
		14 -		-	
Remarks: Plot has filled in sin	ce 20	- Inc	reased amount	5 04	
honsetail and read	Cana	MANDASS T	han Oneutous o	ccessm.	
horsetail And reed	-c una	14	iun previous u	53235011	

US Army Corps of Engineers

SOIL

Sampling Point: W-10

Profile Description: (Describe to the of Depth Matrix	depth needed to document the indicator or con Redox Features	minimule absence of indicators.)
(inches) Color (moist) %	Color (moist)%Type ¹ Loc	2 Texture Remarks
0-16 loyA 2/1 100		Organic soils, greasy
¹ Type: C=Concentration, D=Depletion, F Hydric Soil Indicators: (Applicable to X 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 MLR Loamy Gleyed Matrix (F2) 	Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2)
Restrictive Layer (if present):		
Type: Depth (inches):		Hydric Soil Present? Yes <u>X</u> No
YDROLOGY Wetland Hydrology Indicators:	characteristics a	
Primary Indicators (minimum of one requ Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Field Observations:	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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LF (B7)Other (Explain in Remarks)	4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 g Roots (C3) ✓ Geomorphic Position (D2) Shallow Aquitard (D3) s (C6) ✓ FAC-Neutral Test (D5)
Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	No X Depth (inches): No X Depth (inches): No X Depth (inches): , monitoring well, aerial photos, previous inspection	Wetland Hydrology Present? Yes X No
Remarks: WeThand Fed during The eo currently dry	Ture exhibits evide erhy part of The gro , Soil is moist how	wing season but is er in The pit.

roject/Site: Condit	City/County: Sk	amania Sampling Date: 7/19/16
pplicant/Owner: PacifiConp		State: W/A Sampling Point: W-/0-0
vestigator(s): B. Horton, S. Ca	NAME OF CONTINUE Township	Same S3: T3N BIOF
		e, convex, none): <u>CODUEX</u> Slope (%): <u>30</u>
		Long: 7/21.539398Datum: NAD &
oil Map Unit Name: Unmapped - rese		
e climatic / hydrologic conditions on the site typical fo		
re Vegetation <u>N</u> , Soil <u>Y</u> , or Hydrology <u>N</u>		e "Normal Circumstances" present? Yes 📈 No
re Vegetation, Soil, or Hydrology	naturally problematic? (If	needed, explain any answers in Remarks.)
UMMARY OF FINDINGS – Attach site m	ap showing sampling poin	t locations, transects, important features, etc
Hydrophytic Vegetation Present? Yes	No x	
	No K Is the Sampl	ed Area land? Yes No <u>×</u>
Remarks: upland plot excaude	Ted on steen	slage adda cent To
The wethand fea	Time Treep.	anguient to
EGETATION – Use scientific names of p	State of the second	
Tree Stratum (Plot size:)	Absolute Dominant Indicato	
		 Number of Dominant Species That Are OBL, FACW, or FAC:3 (A)
		Total Number of Dominant Species Across All Strata:6 (B)
		and the second
	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC:50% (A/B
Sapling/Shrub Stratum (Plot size:)		Dravelance Index workshoot:
Populus babsanifera		Total % Cover of: Multiply by:
Trichocarp	<u>a </u>	- OBL species x 1 =
3		FACW species $15 \times 2 = 30$
·		FAC species $25 \times 3 = 50$
5	= Total Cover	FACU species 40 x4= 120
Herb Stratum (Plot size: +-5')		UPL species x 5 =
LoTus cornicia Tus	10 Y FAC	Column Totals: 80 (A) 240 (B)
Phalanis arundinarea	15 4 FACL	
Mahonia aquifolium	IS_Y_FACU	Hydrophytic Vegetation Indicators:
Acer macrophyllum		4 1 - Rapid Test for Hydrophytic Vegetation
Symphonicarpos Albus	Y FACU	
		3 - Prevalence Index is ≤3.0 ¹
7		4 - Morphological Adaptations ¹ (Provide supportin data in Remarks or on a separate sheet)
3		5 - Wetland Non-Vascular Plants ¹
9		Problematic Hydrophytic Vegetation ¹ (Explain)
10		¹ Indicators of hydric soil and wetland hydrology must
11	6.5 = Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)	- Total Cover	
		Hydrophytic
h		Venetation
2		- Descent? Vec No A
2	= Total Cover	Present? Yes No X

 $\partial_{i} e^{i t}$

Color (moist) % Color (moist) % Type Lec' Tature Remarks 0-7 7, 59 / 8.3 / 4.100	Profile Description: (Describe to the depth needed to document the inc	dicator or confirm the absence of indicators.)
p= 4 7,54B 3/4 100 SilT Locam_rocky 9 cobb/y p= 4 7,54B 3/4 100 SilT Locam_rocky 9 cobb/y p= 4 7,54B 3/4 100 SilT Locam_rocky 9 cobb/y p= 4 7,54B 3/4 100 SilT Locam_rocky 9 cobb/y p= 4 100 100 100 100 ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Depth Matrix Redox Features	
Type: C=Concentration D=D=Depletion RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ¹ Location: PL=Pore Lining, M=Matrix, Indicators for Problematic Hydric Solis ¹ : Histos (A1) Sandy Redox (S5)		
Artic Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histos Epigedon (A2) Sandy Redox (S5)	-7 7,54R 3/4 100	Siltham rocky & cobby
dric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S5)		
dric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S5)		
dric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S5)		
dric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S5)		
dric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S5)		
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S6)		
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S6)		
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Djedon (A2) Sindy Redox (S5) 2 cm Muck (A10) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Depleted Bedrix (F3) Depleted Matrix (F3) Per Parent Material (TF2) Trick Dark Surface (A12) Redox Dark Surface (F6) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Glegved Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Sandy Glegved Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. strictive Layer (If present): Trick Soil Present? Yes No X Depth (inches): S** No X Soil i S O eny dry Secondary Indicators (2 or more required). Water-Stained Leaves (B9) (except High Water Table (A2) MLRA 1, 2, 4A, and 4B) Ad, and 4B) Saturation (A3) Saturation (A3) Startation (A3) Saturation Reduction in Tilled Solis (C5) Recent Iron Reduction in Tilled Solis (C5) Saturation Visible on Aerial Imagery (C1) Onthopopsits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Saturation Visible on		
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histos Epigedon (A2) Stripped Matrix (S6)	vne: C=Concentration D=Depletion RM=Reduced Matrix CS=Covered of	or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
Histosol (A1)		
Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) weltand hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) weltand hydrology must be present, unless disturbed or problematic. Strictive Layor (If present): Type: C + - Type: C + - No X emarks: Soil is S D eng darg No X Soil is D eng darg Muck at tagphy Secondary Indicators (2 or more required) Startardon (A3) Salt Crust (B11) Water-Stained Leaves (B9) (except High Water Table (A2) MLRA 1, 2, 4A, and 4B) Water. Stainon Usinon Visible on Aerial Imagery (C1) Section (A3) Salt Crust (B11) Drainage Patterns (B10) Saturation Visible on Aerial Imagery (C2) Oth Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Saturation Visible on Aerial Imagery (B7) Other Crust (B4) Presence of Reduced for (C4) Shallow Aquitard (103)		
Hydrogen Sulfide (A4)		
Depleted Below Dark Surface (A11) Depleted Matrix (F3) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Setrictive Layer (If present): ************************************		
Thick Dark Surface (A12) Redox Dark Surface (F6) ³ Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) unless disturbed or problematic. Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Strictive Layer (If present): Type: Bock hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. Type: Bock Hydric Soil Present? Yes No X Depth (inches): S ¹¹ Water Stained Leaves (B9) (except Water-Stained Leaves (B9) (except Water-Stained Leaves (B9) (except Mindicators (C1) Water Stained Leaves (B9) (except Water-Stained Leaves (B9) (mLRA 1, 4, and 4B) Drainage Patterns (B10) Sturation (A3) Salt Crust (B11) Drainage Patterns (B10) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)	_ Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Sandy Mucky Mineral (51) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. estrictive Layer (If present):		
Sandy Gleyed Matrix (S4)	. 이 지금 방법	
setrictive Layer (If present): Type: Pock Depth (inches): 5'' emarks: Soil is orgeny day //DROLOGY (etland Hydrology Indicators: imary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required); Surface Water (A1) Water-Stained Leaves (B9) (except Water-Stained Leaves (B9) (MLRA 1, High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3) Sait Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Inon Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Mo X Depth (inches): Mater Table Present? Yes No X I		
Type: Rock Depth (inches): Statustication (A3) Saturation (A3) Saturation (A3) Saturation (A3) Saturation (A3) Secind I is Original (Invertebrates (B13)) Drainage Patterns (B10) Statustion (A3) Saturation (A3) Secind I consist (B2) Hydrogen suffice Odd (C1) Staturation (A3) Saturation (R48) Secind I construct (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Statace Soil Crask (B6) Stunted or Stressed Plants (D1) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Sparsely Vegetated Concave Surface (B8) The present? Vetar Table Present? Yes No X Depth (inches): urface Water Present? Yes No X Depth (inches): Mater Table Present? Yes <td>Sandy Gleyed Matrix (S4) Redox Depressions (F8)</td> <td>unless disturbed or problematic.</td>	Sandy Gleyed Matrix (S4) Redox Depressions (F8)	unless disturbed or problematic.
Depth (inches):		
construction		
Soil is berg drg /DROLOGY /detand Hydrology Indicators: imary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)	Type:Rock	
Wetland Hydrology Indicators: trimary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)	Depth (inches): 5''	Hydric Soil Present? Yes No メ
trimary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)	Type: <u>Bock</u> Depth (inches): <u>5"</u> Remarks: Soil is very dry	Hydric Soil Present? Yes No 🗴
Surface Water (A1) Water-Stained Leaves (B9) (except Water-Stained Leaves (B9) (mLRA 1, 2, 4A, and 4B) High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C Orift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Metar Abe Depth (inches): Wetland Hydrology Present? Yes No X Vater Table Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry	Hydric Soil Present? Yes No 🔀
High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3)	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry /DROLOGY /etland Hydrology Indicators:	
	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry /DROLOGY /etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Vegetated Concave Surface (B8) No X Depth (inches): Water Table Present? Yes No X Depth (inches): No X aturation Present? Yes No X Depth (inches): No X	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry /DROLOGY /etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) _ Surface Water (A1) Water-Stained Leaves	Secondary Indicators (2 or more required) s (B9) (except Water-Stained Leaves (B9) (MLRA 1, 3)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Vegetated Concave Surface (B8) No X Depth (inches): water Table Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X aturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry (DROLOGY Vetland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) _ Surface Water (A1) Water-Stained Leaves _ High Water Table (A2) MLRA 1, 2, 4A, an	s (B9) (except Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) 4A, and 4B)
	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry /DROLOGY /etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves High Water Table (A2) MLRA 1, 2, 4A, an Saturation (A3) Salt Crust (B11)	Secondary Indicators (2 or more required) (B9) (except Water-Stained Leaves (B9) (MLRA 1, 2 Md 4B) Vater-Stained Leaves (B9) (MLRA 1, 2 Drainage Patterns (B10)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Increase Vater Present? Yes No water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No aturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No X	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry (DROLOGY (etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) <u>Water-Stained Leaves</u> High Water Table (A2) <u>MLRA 1, 2, 4A, an</u> Saturation (A3) <u>Salt Crust (B11)</u> Water Marks (B1) <u>Aquatic Invertebrates</u>	Secondary Indicators (2 or more required) s (B9) (except
	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry (DROLOGY (etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) <u>Water-Stained Leaves</u> High Water Table (A2) <u>MLRA 1, 2, 4A, an</u> Saturation (A3) <u>Salt Crust (B11)</u> Water Marks (B1) <u>Aquatic Invertebrates</u> Sediment Deposits (B2) <u>Hydrogen Sulfide Odo</u>	Secondary Indicators (2 or more required) s (B9) (except
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) ield Observations: unface Water Present? Yes No _X Depth (inches): vater Table Present? Yes No _X Depth (inches): water Scaling Y fringe) Wetland Hydrology Present? Yes No _X	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry //DROLOGY //detland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) _ Surface Water (A1) Water-Stained Leaves _ High Water Table (A2) Water-Stained Leaves _ High Water Table (A2) MLRA 1, 2, 4A, an _ Saturation (A3) Salt Crust (B11) _ Water Marks (B1) Aquatic Invertebrates _ Sediment Deposits (B2) Hydrogen Sulfide Odo _ Drift Deposits (B3) Oxidized Rhizosphere	Secondary Indicators (2 or more required) s (B9) (except
Inundation Visible on Aerial Imagery (B7)Other (Explain in Remarks)Frost-Heave Hummocks (D7)Sparsely Vegetated Concave Surface (B8) ield Observations: urface Water Present? YesNo _X Depth (inches): Vater Table Present? YesNo _Y Depth (inches): aturation Present? YesNo _X Depth (inches): Wetland Hydrology Present? YesNo _X Depth (inches):	Type: <u>Bock</u> Depth (inches): <u>S</u> " emarks: Soil is very dry (DROLOGY (etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves High Water Table (A2) MLRA 1, 2, 4A, an Saturation (A3) Salt Crust (B11) Water Marks (B1) Salt Crust (B11) Water Marks (B1) Hydrogen Sulfide Odo Drift Deposits (B3) Oxidized Rhizosphere Algal Mat or Crust (B4) Presence of Reduced	Secondary Indicators (2 or more required) s (B9) (except
Sparsely Vegetated Concave Surface (B8) leld Observations: urface Water Present? Yes No _X Depth (inches): vater Table Present? Yes No _Y Depth (inches): aturation Present? Yes No _X Depth (inches): ncludes capillary fringe)	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry /DROLOGY /dretand Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves High Water Table (A2) MLRA 1, 2, 4A, an Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates Sediment Deposits (B2) Hydrogen Sulfide Odo Drift Deposits (B3) Oxidized Rhizosphere Algal Mat or Crust (B4) Presence of Reduced Iron Deposits (B5) Recent Iron Reduction	Secondary Indicators (2 or more required) s (B9) (except
ield Observations: urface Water Present? Yes No _X Depth (inches): vater Table Present? Yes No _Y Depth (inches): aturation Present? Yes No _X Depth (inches): mcludes capillary fringe) Wetland Hydrology Present? Yes No _X Depth (inches):	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry (DROLOGY (etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves High Water Table (A2) MLRA 1, 2, 4A, an Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates Sediment Deposits (B2) Hydrogen Sulfide Odo Drift Deposits (B3) Oxidized Rhizosphere Algal Mat or Crust (B4) Presence of Reduced Iron Deposits (B5) Recent Iron Reduction Surface Soil Cracks (B6) Stunted or Stressed P	Secondary Indicators (2 or more required) s (B9) (except
urface Water Present? Yes No _X Depth (inches): /ater Table Present? Yes No _Y Depth (inches): aturation Present? Yes No _X Depth (inches): Wetland Hydrology Present? Yes No _X	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry /DROLOGY /etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves High Water Table (A2) MLRA 1, 2, 4A, an Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates Sediment Deposits (B2) Hydrogen Sulfide Odo Drift Deposits (B3) Oxidized Rhizosphere Algal Mat or Crust (B4) Presence of Reduced Iron Deposits (B5) Recent Iron Reduction Surface Soil Cracks (B6) Stunted or Stressed P Inundation Visible on Aerial Imagery (B7) Other (Explain in Rem	Secondary Indicators (2 or more required) s (B9) (except
/ater Table Present? Yes No Y Depth (inches): aturation Present? Yes No X Depth (inches): mcludes capillary fringe) Wetland Hydrology Present? Yes No X	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry /DROLOGY /etland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) <u>Water-Stained Leaves</u> High Water Table (A2) <u>MLRA 1, 2, 4A, an</u> Saturation (A3) <u>Salt Crust (B11)</u> Water Marks (B1) <u>Aquatic Invertebrates</u> Sediment Deposits (B2) <u>Hydrogen Sulfide Odo</u> Drift Deposits (B3) <u>Oxidized Rhizosphere</u> Algal Mat or Crust (B4) <u>Presence of Reduced</u> Iron Deposits (B5) <u>Recent Iron Reductior</u> Surface Soil Cracks (B6) <u>Stunted or Stressed P</u> Inundation Visible on Aerial Imagery (B7) Other (Explain in Rem Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (2 or more required) s (B9) (except
aturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X N	Type: <u>Bock</u> Depth (inches): <u>5</u> " emarks: Soil is very dry //DROLOGY //detland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Surface Water (A1) <u>Water-Stained Leaves</u> High Water Table (A2) <u>MLRA 1, 2, 4A, an</u> Saturation (A3) <u>Salt Crust (B11)</u> Water Marks (B1) <u>Salt Crust (B11)</u> <u>Salt Crust (B1)</u> <u>Salt Crust (B1)</u>	Secondary Indicators (2 or more required) s (B9) (except
ncludes capillary fringe)	Type: Bock Depth (inches): 5" emarks: Soil is very dry /DROLOGY // DROLOGY // Atland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) _ Surface Water (A1) _ High Water Table (A2) _ High Water Table (A2) _ Saturation (A3) _ Saturation (A3) _ Sediment Deposits (B2) _ Inth Deposits (B3) _ Oxidized Rhizosphere Algal Mat or Crust (B4) _ Inondation Visible on Aerial Imagery (B7) _ Inundation Visible on Aerial Imagery (B7) _ Inundation Visible on Aerial Imagery (B7) _ Inundation Visible on Aerial Imagery (B7) _ Sarsely Vegetated Concave Surface (B8) Ield Observations: watere Water Present?	Secondary Indicators (2 or more required) s (B9) (except
ncludes capillary tringe)	Type: Bock Depth (inches): .5" Jemarks: Soil is very dry Voltand Hydrology Indicators: trimary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required) s (B9) (except
locoribe Recorded Lists (stream dauge, monitoring well serial photos, previous inspections) it svalishie	Type: Bock Depth (inches): 5" Jemarks: Soil is very dry Votand Hydrology Indicators: trimary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required) s (B9) (except

oject/Site: Condit	City/County: Klic	KiTaT Sampling Date: 7/20/11
plicant/Owner: PacifiCorp		State: WA Sampling Point: W-12
vestigator(s): B. HorTon, S. Caro	Lana_ Section, Township, Ra	nge: 53- T.3N - RIDE
adform (hillslope terrace etc.): FL mod pla	Lin Local relief (concave,	convex, none): Concave_ Slope (%): <1
bregion (LRR): A	Lat 45. 768147	Long: -121.535786 Datum: NAD 83
		NWI classification: PFO - riverin
e climatic / hydrologic conditions on the site typical fo		
climatic / hydrologic conditions on the site typical to	a unis fine or year? Tes No _	"Normal Circumstances" present? Yes X No
		eeded, explain any answers in Remarks.)
e Vegetation _A), Soil _↓, or Hydrology _A		
JMMARY OF FINDINGS – Attach site m	ap showing sampling point l	ocations, transects, important features, etc
	_ No	
	_ No Is the Sampled within a Wetlan	nd? Yes No
Vetland Hydrology Present? Yes X		
emarks: This feature is a Chosest to the old ha	in intact pre-bi ke Fringe has V	reach wethand. Area Degun To dryup, wethand
EGETATION – Use scientific names of p	plants. Area Slighth	y smaller Than 2014 sun
	Absolute Dominant Indicator	Dominance Test worksheet:
ree Stratum (Plot size:)	<u>% Cover Species?</u> Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
		Total Number of Dominant Species Across All Strata:(B)
	= Total Cover	Percent of Dominant Species
apling/Shrub Stratum (Plot size:)		Prevalence Index worksheet:
		Total % Cover of: Multiply by:
		OBL species x 1 =
		FACW species x 2 =
		FAC species x 3 =
		FACU species x 4 =
erb Stratum (Plot size: +=5)	= Total Cover	UPL species x 5 =
EquiseTum arvense	TO Y FAC	Column Totals: (A) (B)
Thepatiens capensis		Prevalence Index = B/A =
Bubus armentacus		Hydrophytic Vegetation Indicators:
11		1 - Rapid Test for Hydrophytic Vegetation
		X 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)
		C Contraction of the second s second second se second second s
0		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
0		
0	105 = Total Cover	be present, unless disturbed or problematic.
0	105 = Total Cover	be present, unless disturbed or problematic. Hydrophytic
<u>Voody Vine Stratum</u> (Plot size:) Bare Ground in Herb Stratum	= Total Cover	be present, unless disturbed or problematic.

US Army Corps of Engineers

SOIL

	oth needed to document the indicator or con	firm the absence of indicators.)
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type ¹ Loc	2 Texture Remarks
	7.548.5/8 30 G M	2 Silty chay hear
¹ Type: C=Concentration, D=Depletion, RM Hydric Soil Indicators: (Applicable to all	=Reduced Matrix, CS=Covered or Coated San	d Grains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
		2 cm Muck (A10)
Histosol (A1) Histic Epipedon (A2)	Sandy Redox (S5) Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLR	1 - 이번
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	X Depleted Matrix (F3)	
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		and the second se
Depth (inches):		Hydric Soil Present? Yes X No
IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require	d: check all that apply)	Secondary Indicators (2 or more required)
X Surface Water (A1)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
X High Water Table (A2) X Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)		Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Tilled Soils	
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LF	
Inundation Visible on Aerial Imagery (E	그는 것은 바람이 가지 않는 것이 잘 가지 않는 것을 하는 것이 같이 하는 것이 같이 했다.	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface	—	
Field Observations:		
	No X Depth (inches):	
Construction of the second sec	No Depth (inches): 1/	
		Wetland Hydrology Present? Yes X No
(includes capillary fringe)	nonitoring well, aerial photos, previous inspection	
Remarks: Standing wat	er present within :	some areas of The
wethand, SK	une cabbage (OBL)	Some areas of The patches Near center ration
indicaling	perenniat Salu	ralion

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

Project/Site: Condit	_ City/County: KIrc	KiTaT	_ Sampling Date: 7	120/16
Applicant/Owner: Pacificorp			Sampling Point:	-12-upl
Investigator(s): B. Honton, S. Caruan	Section, Township, Ran	ge: <u>53-T3N</u>	- RIDE	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, c	onvex, none): <u>Cor</u>	NUex Slope	(%): 5%
Subregion (LRR): _A Lat:	45.7680.39	Long: 121. 5.3	58/3 Datum:	NAD83
Soil Map Unit Name: 92- Husun gravell	rashy loam	NWI classifi	cation:	
Are climatic / hydrologic conditions on the site typicator this time				
Are Vegetation, Soil, or Hydrology signification		Normal Circumstances"		_ No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If nee	eded, explain any answ	ers in Remarks.)	
SUMMARY OF FINDINGS - Attach site map show	ing sampling point lo	ocations, transects	s, important feat	ures, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No X No X No X	Is the Sampled Area within a Wetland?	Yes	No <u></u>
Remarks:					

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
		Species?		Number of Dominant Species	2	
1. PseudoTsuga menzesii	70	_Y_	FACU	That Are OBL, FACW, or FAC	2	(A)
2 C				Total Number of Dominant	0	
3.				Species Across All Strata:	0	(B)
4.				Percent of Dominant Species	0-	
		= Total Co	ver	That Are OBL, FACW, or FAC		(A/B)
Sapling/Shrub Stratum (Plot size:)	0	14	FAC	Prevalence Index worksheet	:	
	30	<u> </u>		Total % Cover of:	Multiply by:	1
2. Alnus rubra	15		FAC	OBL species	x 1 =	-
3. Conglus connuta	20		FACU	FACW species	x 2 =	-
4. Rubus paru; fiorus	20		FACU	FAC species		
5. Acen macrophyllum		7	FALL	FACU species		
1/	105	= Total Co	ver	UPL species		
Herb Stratum (Plot size:)	2		FACU	Column Totals:		
1. Polystichum munitum		-4-				
2. Rosa nutkana	30	4	FAC	Prevalence Index = B/A	=	_
3. Impatiens capensis	20	4	FACW	Hydrophytic Vegetation Indi		
4				1 - Rapid Test for Hydrop	hytic Vegetation	
5				2 - Dominance Test is >50	0%	
6.	<u></u>			3 - Prevalence Index is <3	3.0 ¹	
7				4 - Morphological Adapta data in Remarks or on	tions ¹ (Provide sup	oporting
8				5 - Wetland Non-Vascular		
9						1-1
10				Problematic Hydrophytic		
11				¹ Indicators of hydric soil and w be present, unless disturbed of	vetland hydrology	must
	80	= Total Co	ver	be present, unless distarbed o	n problemade.	
Woody Vine Stratum (Plot size:)	-					
1				Hydrophytic		
2		<u></u>		Vegetation Present? Yes	No X	
		= Total Co	ver	Fleselltr les		
% Bare Ground in Herb Stratum						-
Remarks:						

Sar C

Sampling Point: W-12 upt

Profile Description: (Describe to the		
Depth <u>Matrix</u> (inches) Color (moist) %	Color (moist) % Type ¹ Lo	pc ² Texture Remarks
5-16 104R 4/3 10		SiltLoam
Type: C=Concentration, D=Depletion, I	RM=Reduced Matrix, CS=Covered or Coated Sa	and Grains. ² Location: PL=Pore Lining, M=Matrix.
lydric Soil Indicators: (Applicable to		Indicators for Problematic Hydric Soils ³ :
_ Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLF	
_ Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	Depleted Matrix (F3) Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
lestrictive Layer (if present):		
Туре:		
		Hydric Soil Present? Yes No X
YDROLOGY Vetland Hydrology Indicators:		
Remarks: YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one requ		Secondary Indicators (2 or more required)
YDROLOGY Yetland Hydrology Indicators: Primary Indicators (minimum of one requ Surface Water (A1)	Water-Stained Leaves (B9) (excep	Secondary Indicators (2 or more required) ot Water-Stained Leaves (B9) (MLRA 1, 2,
YDROLOGY Yetland Hydrology Indicators: Yrimary Indicators (minimum of one requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) ot Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
YDROLOGY Yetland Hydrology Indicators: Irimary Indicators (minimum of one requ Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Secondary Indicators (2 or more required) pt Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
YDROLOGY Vetland Hydrology Indicators: Irimary Indicators (minimum of one requ Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requestion) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	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)
YDROLOGY Vetland Hydrology Indicators: Irimary Indicators (minimum of one requ Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin	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)
YDROLOGY Vetland Hydrology Indicators: Irimary Indicators (minimum of one requ Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Irimary Indicators (minimum of one requ Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4)	Secondary Indicators (2 or more required) ot
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YDROLOGY Vetland Hydrology Indicators: Irimary Indicators (minimum of one request 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)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks)	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one requestion)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks) ce (B8)	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one required)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L r (B7) Other (Explain in Remarks) ce (B8) No X Depth (inches):	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one requent of the second sec	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks) ce (B8) No X Depth (inches):	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one requent of the second sec	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks) ce (B8) No X Depth (inches):	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one required)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks) ce (B8) No X Depth (inches):	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one requent)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7)Other (Explain in Remarks) ce (B8) No _X Depth (inches): No _X Depth (inches): No _X Depth (inches):	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one required)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7)Other (Explain in Remarks) ce (B8) No _X Depth (inches): No _X Depth (inches): No _X Depth (inches):	Secondary Indicators (2 or more required) ot
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one requent)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Stunted or Stressed Plants (D1) (L (B7)Other (Explain in Remarks) ce (B8) No _X Depth (inches): No _X Depth (inches): No _X Depth (inches):	Secondary Indicators (2 or more required) ot

roject/Site: Condit	City/County: KI	KiTaT Sampling Date: 7/20/1
pplicant/Owner: PacifiCorp		State: WA Sampling Point: W-21
vestigator(s): S. Caruana, P	Hov-Ton Section, Township, F	Range: S3-T3N-RIDE
andform (hillslope terrace etc.): Hill Slope	2. Local relief (concave	e, convex, none): Concave Slope (%): 29
ubregion (LRR): A	1 45, 770102	Long: 121.536613 Datum: NAD 83
bil Map Unit Name: 90A - Hood	Lat. 10.000	NWI classification: PPO
re climatic / hydrologic conditions on the site typical		
e Vegetation, Soil, or Hydrology		e "Normal Circumstances" present? Yes 🗶 No
re Vegetation, Soil, or Hydrology	naturally problematic? (If	needed, explain any answers in Remarks.)
UMMARY OF FINDINGS – Attach site	map showing sampling point	locations, transects, important features, etc
Hydrophytic Vegetation Present? Yes X	No	
Hydric Soil Present? Yes X	No Is the Sample	ed Area land? Yes No
Wetland Hydrology Present? Yes X	No within a wet	
Remarks: Wethand is subst	Tantially Smaller	in size, Interior of
Werland Feature		
EGETATION – Use scientific names of	Very second s	
Tree Stratum (Plot size:)	Absolute Dominant Indicato % Cover Species? Status	
1. Thuja phicata	80 y FACU	- Number of Dominant Species
- maj - prince inc		
3.		Total Number of Dominant Species Across All Strata: (B)
4.		
	= Total Cover	 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size:)	Prevalence Index worksheet:
1		Total % Cover of: Multiply by:
2		OBL species x 1 =
3		FACW species x 2 =
4		FAC species x 3 =
	= Total Cover	FACU species x 4 =
Herb Stratum (Plot size: Y= 5')		UPL species x 5 =
LysichiTon america		_ Column Totals: (A) (B)
Tachys coolega		
AThy rolam Filix-Ifen		 Hydrophytic Vegetation Indicators:
. Impations capens.	10 FAL	2 1 - Rapid Test for Hydrophytic Vegetation
5		2 - Dominance Test is >50%
6		3 - Prevalence Index is ≤3.0 ¹
7		 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
B		5 - Wetland Non-Vascular Plants ¹
9		Problematic Hydrophytic Vegetation ¹ (Explain)
10		¹ Indicators of hydric soil and wetland hydrology must
11	90 = Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)		
<u> </u>		_ Hydrophytic
2		Vegetation
A second s	= Total Cover	Present? Yes X No
% Bare Ground in Herb Stratum		

SOIL

- 1

Profile Desc Depth	Mat	trix			Redox Fe	atures							
(inches)	Color (mois	st)	%	Color (mois	:t)	%	Type ¹	Loc ²	Texture	-	_	Remarks	
0-8	IOYR :	3/2	100						SIT	Loam	1.2.1		
8-16	JOY R 3	3/2	90	IOYR 5	18_1	0	<u> </u>	<u>m</u>	Sir	<u>Loa</u>	m		
		_											
				=Reduced Matr				d Sand Gr				re Lining, M natic Hydri	
Histosol		ppneu		Sandy Re		e note	u.)			cm Muck		nade riyan	
Contraction of the second second	pipedon (A2)			Stripped N		0				ed Paren		al (TF2)	
Black His) (except	MLRA 1)				Surface (T	12)
	n Sulfide (A4)			Loamy Gle						ther (Exp			
	Below Dark Su		(A11)	X Depleted	Matrix (F3))							
	irk Surface (A12			Redox Da								tic vegetatio	
	lucky Mineral (S			Depleted I			7)					nust be pres	
	leyed Matrix (S			Redox De	pressions	(F8)			un	less distu	rbed or	problematic	
	ayer (if preser	nt):							1.1				
Type:											5 6	L.	
Depth (inc Remarks:	:hes):								Hydric S	oil Prese	nt? Y	es 🔏	No
Remarks: YDROLO	GY								Hydric S	oil Prese	nt? Y		NO
Remarks:	GY Irology Indicat	tors:											
Remarks: YDROLO Wetland Hyd Primary Indic	GY Irology Indicat ators (minimum	tors:	e require	d; check all that						condary Ir	ndicators	s (2 or more	required)
Remarks: YDROLO Wetland Hyd Primary Indic X Surface	GY Irology Indicat ators (minimum Water (A1)	tors:	e require	Wate	r-Stained			xcept		condary Ir Water-S	ndicators	s (2 or more	required)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface V X High Wa	GY Irology Indicat ators (minimum Water (A1) ter Table (A2)	tors:	e require	Wate M	r-Stained LRA 1, 2,	4A, a		xcept		condary Ir Water-S 4A, a	ndicators tained L nd 4B)	s (2 or more eaves (B9)	required)
Remarks: YDROLO Wetland Hyd Primary Indic X Surface V X High Wa X Saturatio	GY Irology Indicat ators (minimum Water (A1) ter Table (A2) on (A3)	tors:	e require	Wate M Salt C	r-Stained LRA 1, 2, Crust (B11	4A, ai)	nd 4B)	xcept		condary Ir Water-S 4A, a Drainage	ndicators tained L nd 4B) e Pattern	<u>s (2 or more</u> eaves (B9) ns (B10)	<u>required)</u> (MLRA 1, 2,
Remarks: YDROLOO Wetland Hyc Primary Indic X Surface N X High Wa X Saturatio Water Mi	GY Irology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1)	tors: n of one	e require	Wate M Salt (Aqua	r-Stained LRA 1, 2, Crust (B11 tic Inverte	4A, and) brates	nd 4B) (B13)	xcept		condary Ir Water-S 4A, a Drainage Dry-Sea	adicators tained L nd 4B) e Pattern son Wat	s (2 or more eaves (B9) ns (B10) ter Table (C	<u>required)</u> (MLRA 1, 2, 2)
Remarks: YDROLOO Wetland Hyc Primary Indic X Surface V X High Wa X Saturatio Water Ma Sedimen	GY prology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2)	tors: n of one	e require	Wate M Salt (Aqua Hydro	r-Stained LRA 1, 2, Crust (B11 tic Inverte ogen Sulfic	4A, and) brates de Od	nd 4B) (B13) or (C1)		<u>Se</u>	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio	adicators tained L nd 4B) e Pattern son Wal	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial	required) (MLRA 1, 2, 2)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface V X High Wa X High Wa X Saturatio Water Ma Sedimen Drift Dep	GY prology Indicat pators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) osits (B3)	tors: n of one	e require	Wate M Salt (Aqua Hydro Oxidi	r-Stained LRA 1, 2, Crust (B11 tic Inverte ogen Sulfic zed Rhizo	4A, and brates de Od	nd 4B) (B13) or (C1) es along	Living Roo	<u>Se</u>	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor	tained L nd 4B) Pattern son Watern Visibl phic Pos	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2)	required) (MLRA 1, 2, 2)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface N X High Wai X Saturatio Water Ma Sedimen Drift Dep Algal Ma	GY frology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4)	tors: n of one	e require	Wate M Salt (Aqua Hydro Oxidi Prese	r-Stained LRA 1, 2, Crust (B11 tic Invertel ogen Sulfid zed Rhizo ence of Re	4A, and brates de Od osphere educed	nd 4B) (B13) or (C1) es along d Iron (C4	Living Roo	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow	tained L nd 4B) Pattern son Watern on Visibl phic Pos Aquitard	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3)	required) (MLRA 1, 2, 2)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface N X High Wa X Saturatio Water M: Sedimen Drift Dep Algal Ma Iron Dep	GY frology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) osits (B5)	tors: n of one	e require	Wate M Salt (Aqua Hydro Oxidi Prese Rece	r-Stained LRA 1, 2, Crust (B11 tic Invertel ogen Sulfic zed Rhizo ence of Re nt Iron Re	4A, and brates de Od osphere educed	nd 4B) (B13) or (C1) es along d Iron (C4 n in Tille	Living Roo I) d Soils (C6	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow FAC-Net	adicators tained L nd 4B) e Pattern son Wai on Visibl ohic Pos Aquitarc utral Tes	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3) st (D5)	required) (MLRA 1, 2, 2) Imagery (C9
Primary Indic Primary Indic X Surface V X High Wat X Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S	GY Irology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) t Deposits (B2) t or Crust (B4) osits (B5) Soil Cracks (B6	tors: n of one		Wate M Salt (Aqua Hydro Oxidi Prese Rece Stunt	r-Stained LRA 1, 2, Crust (B11 tic Inverte ogen Sulfic zed Rhizo ence of Re nt Iron Re ed or Stre	4A, and brates de Od osphere educed eductio	nd 4B) (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D	Living Roo	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow FAC-Nei Raised A	adicators dained L nd 4B) e Pattern son Wal on Visibl ohic Pos Aquitarc utral Tes Ant Mou	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3) st (D5) nds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9, RR A)
Remarks: YDROLOO Wetland Hyc Primary Indic X Surface N X High War X Saturatio Water Ma X Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio	GY frology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6 on Visible on Ae	tors: n of one	agery (B	Wate M Salt (Aqua Hydro Oxidi Prese Rece Stunt 7) Other	r-Stained LRA 1, 2, Crust (B11 tic Invertel ogen Sulfic zed Rhizo ence of Re nt Iron Re	4A, and brates de Od osphere educed eductio	nd 4B) (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D	Living Roo I) d Soils (C6	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow FAC-Nei Raised A	adicators dained L nd 4B) e Pattern son Wal on Visibl ohic Pos Aquitarc utral Tes Ant Mou	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3) st (D5)	required) (MLRA 1, 2, 2) Imagery (C9, RR A)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface V X High Wat X Saturation Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundation Sparsely	GY Irology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6 on Visible on Ae Vegetated Cor	tors: n of one	agery (B	Wate M Salt (Aqua Hydro Oxidi Prese Rece Stunt 7) Other	r-Stained LRA 1, 2, Crust (B11 tic Inverte ogen Sulfic zed Rhizo ence of Re nt Iron Re ed or Stre	4A, and brates de Od osphere educed eductio	nd 4B) (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D	Living Roo I) d Soils (C6	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow FAC-Nei Raised A	adicators dained L nd 4B) e Pattern son Wal on Visibl ohic Pos Aquitarc utral Tes Ant Mou	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3) st (D5) nds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9, RR A)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface N X High Wa X Saturatio Water M: Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ	GY alors (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6 on Visible on Ae Vegetated Corr vations:	tors: n of one) erial Im ncave S	agery (B Surface (Wate M Salt (Aqua Hydro Oxidi Prese Rece Stunt 7) Other B8)	r-Stained LRA 1, 2, Crust (B11 tic Invertel ogen Sulfid zed Rhizo ence of Re nt Iron Re ed or Stre r (Explain	4A, and brates de Od educed educed essed F in Ren	nd 4B) (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D	Living Roo I) d Soils (C6	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow FAC-Nei Raised A	adicators dained L nd 4B) e Pattern son Wal on Visibl ohic Pos Aquitarc utral Tes Ant Mou	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3) st (D5) nds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9, RR A)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface V X High Wa X Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ	GY frology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6 on Visible on Ae Vegetated Cor vations: er Present?	tors: n of one) erial Im ncave S	agery (B Surface (s <u>×</u>	— Wate M Salt (Aqua Hydro Oxidi Prese Rece Stunt 7) Other B8) No Dep	r-Stained LRA 1, 2, Crust (B11 tic Invertel ogen Sulfid zed Rhizo ence of Re nt Iron Re ed or Stre r (Explain i th (inches)	4A, and brates de Od educed eductio essed F in Ren	nd 4B) (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D	Living Roo I) d Soils (C6	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow FAC-Nei Raised A	adicators dained L nd 4B) e Pattern son Wal on Visibl ohic Pos Aquitarc utral Tes Ant Mou	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3) st (D5) nds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9, RR A)
Remarks: YDROLOO Wetland Hyd Primary Indic X Surface N X High Wa X Saturatio Water M: Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ	GY Irology Indicat ators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6 on Visible on Ae Vegetated Cor rations: er Present? Present?	tors: n of one s) erial Im ncave S Yes	agery (B Surface (s X	— Wate M Salt (Aqua Hydro Oxidi Prese Rece Stunt 7) Other B8) No Depr No Depr	r-Stained LRA 1, 2, Crust (B11 tic Inverted ogen Sulfid zed Rhizo ence of Re nt Iron Re ed or Stre r (Explain th (inches) th (inches)	4A, and brates de Od educed eductio essed F in Ren):	nd 4B) (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D	Living Roo I) d Soils (C6 1) (LRR A)	<u>Se</u> 	condary Ir Water-S 4A, a Drainage Dry-Sea Saturatio Geomor Shallow FAC-Nei Raised A Frost-He	adicators alained L nd 4B) e Pattern son Wal on Visibl ohic Pos Aquitarc utral Tes Ant Mou ave Hu	s (2 or more eaves (B9) ns (B10) ter Table (C le on Aerial sition (D2) d (D3) st (D5) nds (D6) (L mmocks (D	required) (MLRA 1, 2, 2) Imagery (C9 RR A)
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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Condit	City/County: KlickiTaT Sampling Date: 7/20/16
Applicant/Owner: Pacificorp	State: W A Sampling Point: W - 21 - 42
Investigator(s): B. Horton S.	avaana Section, Township, Range: <u>S3-T3N-RIOE 1</u>
Landform (hillslope, terrace, etc.): #11.51	Local relief (concave, convex, none): Concave Slope (%): 57
Subregion (LRR):	Lat: 45.770164 Long: -121.536647 Datum: NAD 83
Soil Map Unit Name:	NWI classification:
	I for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrolog	
Are Vegetation, Soil, or Hydrolog	
SUMMARY OF FINDINGS - Attach s	map showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	
	No X Is the Sampled Area within a Wetland? Yes No X
Remarks:	
VEGETATION – Use scientific names	f plants. Absolute Dominant Indicator Dominance Test worksheet:

10 - 20'	Absolute		Indicator	Dominance Test worksneet:		
Tree Stratum (Plot size: r=30')	-	Species?	Status	Number of Dominant Species	2	
1. Isuga hoterophyla	30		FAC	That Are OBL, FACW, or FAC:		(A)
2. Thuga plicata	_50	4	FAC	Total Number of Dominant	2	
3. PseudoTsuga menzesii	10		HACU	Species Across All Strata:	2	(B)
4O	1 - 5 -			Percent of Dominant Species		
	90	= Total Co	over	That Are OBL, FACW, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plot size: r=15)				Provalance Index worksheet:		-
1. Acen circinatum	20	4	FACU	Total % Cover of:		
2				OBL species		
3				FACW species		
4				FAC species		
5.						
		= Total Co	over	FACU species		
Herb Stratum (Plot size: Y=5)	-			UPL species		
1. AThyrium Filix-temina	10	4	FAC	Column Totals: ((A)	_ (B)
2. Gallium a parine	10		FACU	Prevalence Index = B/A	=	_
3. Mahania dquifohium	10		FACY	Hydrophytic Vegetation Indic		
4. Bubus unsinus	10		FAcu	1 - Rapid Test for Hydroph	ytic Vegetation	
5. AchlysTriphylla			FACID	2 - Dominance Test is >50	1%	
6. Polystichum/manitum	10		FACU	3 - Prevalence Index is ≤3.	.0 ¹	
7.				4 - Morphological Adaptati		oporting
8.			1	data in Remarks or on a	a separate sheet)	1
9.	_			5 - Wetland Non-Vascular	Plants ¹	
10.				Problematic Hydrophytic V	egetation ¹ (Expla	uin)
11.	19 million (19 mil			¹ Indicators of hydric soil and w	etland hydrology	must
	60	= Total Co	ver	be present, unless disturbed or	r problematic.	
Woody Vine Stratum (Plot size:)	00					
1		_		Hydrophytic		
2.				Vegetation Present? Yes X		
		= Total Co	over	Present? Yes A	No	
% Bare Ground in Herb Stratum						_
Remarks:						

L

18

SOIL

Sampling Point: W-21 u pL

rofile Description: (Describ				
Depth <u>Matrix</u> (inches) Color (moist)	%	Redox Features Color (moist) % Type ¹ L	oc ² Text	ure Remarks
2-16 1048 34	100			
	-			
and the second				
				North Contraction of the Contrac
ype: C=Concentration, D=D	epletion, RM=	Reduced Matrix, CS=Covered or Coated S	Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
ydric Soil Indicators: (App	icable to all	LRRs, unless otherwise noted.)	In	dicators for Problematic Hydric Soils ³ :
_ Histosol (A1)		Sandy Redox (S5)		_ 2 cm Muck (A10)
Histic Epipedon (A2)		Stripped Matrix (S6)	V	_ Red Parent Material (TF2)
Black Histic (A3)		Loamy Mucky Mineral (F1) (except M	LRA 1)	Very Shallow Dark Surface (TF12)
_ Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)		Other (Explain in Remarks)
_ Depleted Below Dark Surf	ace (A11)	Depleted Matrix (F3)	3,	ndicators of hydrophytic vegetation and
_ Thick Dark Surface (A12)		Redox Dark Surface (F6)	- Ir	wetland hydrology must be present,
Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7) Redox Depressions (F8)		unless disturbed or problematic.
Sandy Gleyed Matrix (S4) estrictive Layer (if present)				
Туре:			Hydri	ic Soil Present? Yes No
			inyan	
YDROLOGY Yetland Hydrology Indicator	s:			
Remarks: YDROLOGY Vetland Hydrology Indicator	s:	t; check all that apply)		Secondary Indicators (2 or more required)
YDROLOGY Yetland Hydrology Indicator Irimary Indicators (minimum o Surface Water (A1)	s:	t; check all that apply) Water-Stained Leaves (B9) (exc	ept	Water-Stained Leaves (B9) (MLRA 1, 2,
YDROLOGY Yetland Hydrology Indicator Irimary Indicators (minimum of Surface Water (A1) High Water Table (A2)	s:	<u>t; check all that apply)</u> Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B)	ept	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Verland Hydrology Indicator Verland Hydrology Indicator Inimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3)	s:	t; check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	ept	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Vetland Hydrology Indicator Vetland Hydrology Indicator Inimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	s:	t; check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	ept	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Vetland Hydrology Indicator Vetland Hydrology Indicator Irimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	s:	t: check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Vetland Hydrology Indicator Vetland Hydrology Indicator rimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	s:	t; check all that apply) — Water-Stained Leaves (B9) (exce MLRA 1, 2, 4A, and 4B) — Salt Crust (B11) — Aquatic Invertebrates (B13) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres along Liv		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)
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Verland Hydrology Indicator rimary Indicators (minimum of 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 Aeri	s: f one required	d: check all that apply)	ring Roots (C3) Soils (C6)	 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)
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Remarks: YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum of 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 Aeri Sparsely Vegetated Conc Field Observations: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? Describe Recorded Data (stree)	s: fone required al Imagery (B ave Surface (Yes Yes Yes	d: check all that apply)	ving Roots (C3) Soils (C6) (LRR A) Wetland Hyd	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)
Remarks: YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum of 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 Aeri Sparsely Vegetated Conc Field Observations: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? Describe Recorded Data (stree)	s: fone required al Imagery (B ave Surface (Yes Yes Yes	d: check all that apply)	ving Roots (C3) Soils (C6) (LRR A) Wetland Hyd	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)
Remarks: YDROLOGY Netland Hydrology Indicator Primary Indicators (minimum of 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 Aeri Sparsely Vegetated Conc Field Observations: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? Saturation Present?	s: fone required al Imagery (B ave Surface (Yes Yes Yes	d: check all that apply)	ving Roots (C3) Soils (C6) (LRR A) Wetland Hyd	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)

	RMINATION D	ATA FORM	I – Weste	ern Moun	tains, Valleys, and Coast Region
ject/Site: Condit			ity/County:	Ska	mania Sampling Date: 7/20/1
Dicant/Owner: Pacifi C	64D		ny/County.	Jite	
					SZT3NRIOE
form (hillslope, terrace, etc.):	oodpla				onvex, none): CONCAUE Slope (%): <19
egion (LRR): A	. '			-	Long: 121. 525622 Datum: NADS
Map Unit Name: Unmap	ped-res	ervoir	Sedi	ments	S NWI classification: PEM / MSS
limatic / hydrologic conditions on th	he site typical for the	his time of yea	r? Yes 📝	No_	(If no, explain in Remarks.)
regetation, Soil $X_{}$, or	Hydrology	significantly d	listurbed?	Are "N	Normal Circumstances" present? Yes X No
egetation, Soil, or	Hydrology	naturally prot	ematic?	(If nee	eded, explain any answers in Remarks.)
MARY OF FINDINGS - A	ttach site map	showing	sampling	point lo	cations, transects, important features, etc.
rophytic Vegetation Present?		No			
ric Soil Present?		No		e Sampled A n a Wetland	
tland Hydrology Present?	Yes X				
narks This Feature	is main	Tained	year	nound	d by An Iron bacTeria FThe White Salmon Chek
minated spring	LTT is i	Thet	and a	to use	FTLA White Salmon Chek
ETATION – Use scientific		nto	map	ican o	he main out the the
ETATION - Use scientific	names or pla		Dominant	Indicator	Dominance Test worksheet:
Stratum (Plot size:)	<u>% Cover</u>			Number of Dominant Species
					That Are OBL, FACW, or FAC:(A)
		<u>.</u>			Total Number of Dominant
					Species Across All Strata:6 (B)
					Percent of Dominant Species
ling/Shrub Stratum (Plot size:			= Total Cov	ver	That Are OBL, FACW, or FAC: 100 (A/B)
Albus rubr		40	Y	FAC	Prevalence Index worksheet:
Populus ba samil		104 Mar	4	EA.	Total % Cover of: Multiply by:
12/10/10/10/10/10		1	-	+ 110-	OBL species x 1 =
					FACW species x 2 =
					FAC species x 3 =
			= Total Cov		FACU species x 4 = UPL species x 5 =
Stratum (Plot size:		40	V		Column Totals: (A) (B)
Juncus ettue				FACW	
Carex obnupt		20		OBL FACE	Prevalence Index = B/A =
Flee baris pa		20		OBI	Hydrophytic Vegetation Indicators:
Poa campyi	-using	20	4	NT	1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50%
· · · · · · · · · · · · · · · · · · ·					3 - Prevalence Index is $\leq 3.0^{1}$
					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.
1.15 0.1.1	1		= Total Cov	er -	
dv vine Stratum (Plot size)					Hydrophytic
					Vegetation
ody Vine Stratum (Plot size:			= Total Cov	er	Present? Yes X No
are Ground in Herb Stratum					

Western Mountains, Valleys, and Coast - Version 2.0

SOIL

Sampling Point: W-a

Profile Desc Depth	Matrix			Features				Demodra
(inches)	Color (moist)	%	Color (moist)		Type	Loc	Texture	Remarks
2-8	10 YR 2/1	-90	104R 5/6	10	5	M	Sand	
				-	-			
					1			
				<u> </u>				(
		-	<u> </u>			_		
Type: C=Co	oncentration, D=Deple	etion, RM	=Reduced Matrix, CS	=Covered	d or Coate	ed Sand G	rains. ² Lo	ocation: PL=Pore Lining, M=Matrix.
ydric Soil I	Indicators: (Applica	ble to all	LRRs, unless other		ed.)			tors for Problematic Hydric Soils ³ :
_ Histosol			X Sandy Redox (S					cm Muck (A10)
	pipedon (A2)		Stripped Matrix		1) /	-		ed Parent Material (TF2) ry Shallow Dark Surface (TF12)
Black Hi			Loamy Mucky M Loamy Gleyed M			I WERA I		her (Explain in Remarks)
	n Sulfide (A4) d Below Dark Surface	(A11)	Depleted Matrix				_ 0	·····
	ark Surface (A12)		Redox Dark Sur				³ Indica	tors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark S	Surface (F	7)		wet	land hydrology must be present,
	Bleyed Matrix (S4)		Redox Depress	ions (F8)	£		unle	ess disturbed or problematic.
	Layer (if present):							
	Bock .						Received	V
Depth (ind	ches): 8 in						Hydric So	il Present? Yes X No
5	Soil is s sulfide c	odor	wated ar	nd /	Hme	ost b	lack,	Strong hydrogen
YDROLO Vetland Hyd	Soil is s sulfide c GY drology Indicators:	aor			4mc	ost b		
YDROLO Vetland Hyd	Soil is s sulfide c GY drology Indicators: cators (minimum of or	aor	d; check all that apply	0			Sec	ondary Indicators (2 or more required)
YDROLO Vetland Hyd Surface	Soil is s sulfide c GY drology Indicators: cators (minimum of or Water (A1)	aor	d; check all that appl Water-Stai	v) ned Leav	res (B9) (Sec	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
YDROLO Vetland Hyu Primary India Surface X High Wa	GY GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2)	aor	d <u>; check all that appl</u> Water-Stai MLRA	/) ned Leav 1, 2, 4A, a	res (B9) (<u>Sec</u>	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
YDROLO Vetland Hyd Primary India Surface X High Wa X Saturatio	Soil is S Sulfide C GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3)	aor	d; check all that appl Water-Stai MLRA Salt Crust	/) ned Leav 1, 2, 4A, i (B11)	ves (B9) (r and 4B)		<u>Sec</u>	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
YDROLO Vetland Hyd Primary India Surface X High Wa Saturatio Water M	Soil is S Sulfide C GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Harks (B1)	aor	d; check all that appl Water-Stai Salt Crust Salt Crust Aquatic Inv	y) ned Leav 1, 2, 4A, a (B11) vertebrate	res (B9) (0 and 4B) es (B13)		<u>Sec</u> 	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
YDROLO Vetland Hyd Primary India Surface X High Wa X Saturation Water M Sedimen	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)	aor	d; check all that appl Water-Stai MLRA Salt Crust Aquatic Inv X Hydrogen	v) ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O	res (B9) (r and 4B) es (B13) dor (C1)	except	Sec 	ondary 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
YDROLO Vetland Hyd Surface XSaturatio Water M Sedimen Drift Deg	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	aor	d; check all that appl Water-Stai MLRA Salt Crust Aquatic Inv X Hydrogen Oxidized F	/) ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe	es (B9) (r and 4B) es (B13) dor (C1) res along	except	<u>Sec</u> 	ondary 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 (CS Geomorphic Position (D2)
YDROLO Vetland Hyd 'rimary India Surface X High Wa Saturatia Saturatia Saturatia Drift Dep Algal Ma	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	aor	d; check all that apply Water-Stai MLRA Salt Crust Aquatic Inv X Hydrogen Oxidized F Presence	/) ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reduce	es (B9) (d and 4B) es (B13) dor (C1) eres along ed Iron (C	except J Living Ro (4)	<u>Sec</u> 	ondary 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)
YDROLO Vetland Hyu Primary India Surface X High Wa X Saturatio Vater M Sedimen Drift Dep Algal Ma Iron Dep	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	aor	d: check all that appl Water-Stai MLRA Salt Crust Aquatic Im X Hydrogen Oxidized F Presence Recent Iro	r) ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Sulfide O Shizosphe of Reduce n Reduct	es (B9) (r and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille	except J Living Ro (4) ed Soils (C	Sec ots (C3) 6)	ondary 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)
YDROLO Yetland Hyu Primary India Surface X High Wa X Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	e require	d; check all that appl Water-Stai Salt Crust Aquatic Inv ↓ Hydrogen Oxidized F Presence of Recent Iro Stunted or	() ned Leav 1, 2, 4A, i (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed	es (B9) (r and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (I	except J Living Ro (4) ed Soils (C	Sec ots (C3) 6) A)	ondary 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)
YDROLO Yetland Hyu Primary India Surface X High Wa X Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	nagery (E	d; check all that appl Water-Stai MLRA Salt Crust Aquatic Im X Hydrogen Oxidized F Presence 0 Recent Iro Stunted or 37) Other (Exp	() ned Leav 1, 2, 4A, i (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed	es (B9) (r and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (I	except J Living Ro (4) ed Soils (C	Sec ots (C3) 6) A)	ondary 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)
YDROLO Vetland Hyu Primary India Surface Y High Wa X Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave	nagery (E	d; check all that appl Water-Stai MLRA Salt Crust Aquatic Im X Hydrogen Oxidized F Presence 0 Recent Iro Stunted or 37) Other (Exp	() ned Leav 1, 2, 4A, i (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed	es (B9) (r and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (I	except J Living Ro (4) ed Soils (C	Sec ots (C3) 6) A)	ondary 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)
YDROLO Yetland Hy Primary India Surface Y High Wa Saturatio Vater M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) harks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Ir y Vegetated Concave vations: er Present?	nagery (E Surface	d; check all that appl Water-Stai MLRA Salt Crust Aquatic Im X Hydrogen Oxidized F Presence 0 Recent Iro Stunted or Stunted or 17) Other (Exp (B8)	() ned Leav 1, 2, 4A, 4 (B11) vertebrate Sulfide O Rhizosphe of Reducti Stressed olain in Re ches):	es (B9) ((and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (I emarks)	except J Living Ro :4) ed Soils (C D1) (LRR A	Sec ots (C3) 6) A)	ondary 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)
YDROLO Vetland Hy Primary India Surface X High Wa X Saturatio Vater M Sedimer Drift Dep Drift Dep Iron Dep Surface Inundati Sparsely Field Obser	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) harks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Ir y Vegetated Concave vations: er Present?	nagery (E Surface	d; check all that appl Water-Stai MLRA Salt Crust Aquatic Im X Hydrogen Oxidized F Presence 0 Recent Iro Stunted or Stunted or 17) Other (Exp (B8)	() ned Leav 1, 2, 4A, 4 (B11) vertebrate Sulfide O Rhizosphe of Reducti Stressed olain in Re ches):	es (B9) ((and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (I emarks)	except Living Ro (4) ed Soils (C D1) (LRR A	Sec ots (C3) 6) A)	ondary 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)
YDROLO Vetland Hy Primary India Surface X High Wa X Saturatia Water M Sedimer Drift Deg Algal Ma Iron Deg Iron Deg Inundati Sparsely Field Obser Surface Wate Nater Table	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: ter Present? Ye	nagery (E Surface	d; check all that apply Water-Stai MLRA Salt Crust Aquatic Inv X Hydrogen Oxidized F Presence of Recent Iro Stunted or 107) Other (Exp (B8)	() ned Leav 1, 2, 4A, i (B11) vertebrate Sulfide O Rhizosphe of Reducti Stressed olain in Re ches): ches):	es (B9) (r and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR A	Sec ots (C3) 6) A)	ondary 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)
YDROLO Vetland Hy Primary India Surface X High Wa X Saturatia Vater M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wate Nater Table Saturation P includes ca	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: er Present? Ye present? Ye pillary fringe)	nagery (E Surface (es es _X	d; check all that apply Water-Stai Salt Crust Aquatic Inv Oxidized F Presence G Stunted or Stonted or (B8) No Depth (inv No Depth (inv No Depth (inv	() ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reducti Stressed plain in Re ches): ches):	es (B9) (d and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (I emarks)	except Living Ro (4) ed Soils (C D1) (LRR /	Sec ots (C3) 6) A) Lland Hydrolo	ondary 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)
YDROLO Vetland Hy Primary India Surface X High Wa X Saturatia Vater M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wate Nater Table Saturation P Includes ca	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: er Present? Ye present? Ye pillary fringe)	nagery (E Surface (es es _X	d; check all that appl 	() ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reducti Stressed plain in Re ches): ches):	es (B9) (d and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (I emarks)	except Living Ro (4) ed Soils (C D1) (LRR /	Sec ots (C3) 6) A) Lland Hydrolo	ondary 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)
YDROLO Vetland Hy Primary India Surface X High Wa X Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsel Field Obser Surface Water Table Saturation P includes ca Describe Re	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: er Present? Ye present? Ye pillary fringe) coorded Data (stream	nagery (E Surface) es es _X gauge, m	d; check all that apply	/) ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reducti Stressed plain in Re- ches): ches): ches): photos, plain	es (B9) (i and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR 4 C Spections)	Sec ots (C3) 6) 6) A) cland Hydrolo	ondary 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) pgy Present? Yes X No
YDROLO Vetland Hyu Primary India Surface Y High Wa X Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Surface Water Saturation P includes ca Describe Re	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: er Present? Ye present? Ye pillary fringe) coorded Data (stream	nagery (E Surface) es es _X gauge, m	d; check all that apply	/) ned Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reducti Stressed plain in Re- ches): ches): ches): photos, plain	es (B9) (i and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR 4 C Spections)	Sec ots (C3) 6) 6) A) cland Hydrolo	ondary 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) pgy Present? Yes X No
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WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Subregion (LRR): <u>A</u> Soil Map Unit Name: <u>Unmapped = res</u> Are climatic / hydrologic conditions on the site typical for the Are Vegetation, Soil, or Hydrology Are Vegetation, Soil, or Hydrology	Lat: <u>45</u> his time of year significantly dis naturally proble	Sedimer ? Yes X No_ sturbed? Are ematic? (If no	convex, none): <u>CONVEX</u> Slope (%): <u>5</u> Long: <u>121, 525606</u> Datum: <u>NADE</u> <u>STS</u> NWI classification: <u></u> (If no, explain in Remarks.) "Normal Circumstances" present? Yes <u>X</u> No <u></u> eeded, explain any answers in Remarks.) ocations, transects, important features, etc
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	No No _ X	Is the Sampled within a Wetlan	d Area V
Remarks: upland plot is s REGETATION - Use scientific names of pla		Twest	of welland plot
<u>Free Stratum</u> (Plot size:) <u>Sapling/Shrub Stratum</u> (Plot size: $Y = 15^{\circ}$) <u>Populus balsamiFeva</u> <u>Trichocarpa</u> <u>Alnus rubra</u> <u>Herb Stratum</u> (Plot size: <u>$Y = 5^{\circ}$</u>) <u>Herb Stratum</u> (Plot size: <u>$Y = 5^{\circ}$</u>)	$\frac{\% \text{ Cover }}{20}$	Total Cover Y FAC Y FAC Total Cover Y FAC Y FAC Y FAC Y FAC	Dominance Test worksheet:Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)Total Number of Dominant Species Across All Strata: 6 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 85 (A/B)Prevalence Index worksheet: 85 (A/B)Total % Cover of:Multiply by:OBL species $x 1 =$ FACW species $x 2 =$ FAC species $x 3 =$ FACU species $x 5 =$ Column Totals:(A)UPL species $x 5 =$ Column Totals:(A)1 - Rapid Test for Hydrophytic VegetationX2 - Dominance Test is >50%3 - Prevalence Index is $\leq 3.0^1$ 4 - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)5 - Wetland Non-Vascular Plants1Problematic Hydrophytic Vegetation1 (Explain)
11			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes X No

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

SOIL

Sampling Point: Wauph

		Dodo		•			
Depth <u>Matrix</u> inches) Color (moist)	%	Color (moist)	x Feature %	S Type ¹	Loc ²	Texture	Remarks
5-9 104R31				C		Sand	
	Jon					Ling	-
				-			
	2.2.2.2						
	1						
					<u></u>	<u></u>	
Type: C=Concentration, D=D	epletion, RM=R	educed Matrix. CS	S=Covered	d or Coate	d Sand Gr	ains. ² Loo	cation: PL=Pore Lining, M=Matrix.
ydric Soil Indicators: (Appl							ors for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Redox (S	65)			2 cm	n Muck (A10)
Histic Epipedon (A2)		Stripped Matrix				Red	Parent Material (TF2)
Black Histic (A3)	1.1	Loamy Mucky M		1) (except	MLRA 1)	Ven	y Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed			and a second second		er (Explain in Remarks)
Depleted Below Dark Surfa	ace (A11)	Depleted Matrix					
Thick Dark Surface (A12)		Redox Dark Su				³ Indicato	ors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark	Surface (F	7)		wetla	ind hydrology must be present,
Sandy Gleyed Matrix (S4)		Redox Depress		2			s disturbed or problematic.
estrictive Layer (if present)					-		
Туре:							
Depth (inches):		-				Hydric Soil	Present? Yes No
Sandy w	ell d r	rained	soi	10	nsi	ope	
Sandy w YDROLOGY		rained	501	10	nsi	iope	
Sandy w YDROLOGY Vetland Hydrology Indicator	s:			10	nsi	•	ndary Indicators (2 or more required)
Sandy w YDROLOGY Vetland Hydrology Indicator	s:	check all that appl	y)			Seco	
Sandy w YDROLOGY Vetland Hydrology Indicator 'rimary Indicators (minimum o _ Surface Water (A1)	s:	check all that appl Water-Stai	y) ined Leav	es (B9) (e		Seco	Vater-Stained Leaves (B9) (MLRA 1, 2,
Sandy w YDROLOGY Vetland Hydrology Indicator rimary Indicators (minimum o _ Surface Water (A1) _ High Water Table (A2)	s:	check all that appl Water-Stai MLRA	y) ined Leav 1, 2, 4A, a	es (B9) (e		<u>Seco</u> l	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Sandy w /DROLOGY /etland Hydrology Indicator rimary Indicators (minimum o _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3)	s:	check all that appl Water-Stai MLRA Salt Crust	y) ined Leav 1, 2, 4A, a (B11)	es (B9) (e and 4B)		<u>Seco</u> V C	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Sandy w YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 	s:	check all that appl Water-Stai Salt Crust Salt Crust Aquatic Inv	y) ined Leav 1, 2, 4A, a (B11) vertebrate	es (B9) (e and 4B) es (B13)		• <u>Secon</u> V C D	Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Sandy w YDROLOGY Vetland Hydrology Indicator Inimary Indicators (minimum o Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	s:	check all that appl Water-Stai Salt Crust Aquatic Inv Hydrogen	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide O	es (B9) (e and 4B) es (B13) dor (C1)	xcept	<u>Seco</u> V C C C	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
Sandy w YDROLOGY Vetland Hydrology Indicator 'rimary Indicators (minimum o Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	s:	<u>check all that appl</u> Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe	es (B9) (e and 4B) es (B13) dor (C1) res along	xcept Living Roo	<u>Secon</u> V C C S ts (C3) G	Vater-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)
Sandy w YDROLOGY Vetland Hydrology Indicator 'rimary Indicators (minimum o 	s:	check all that appl Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reduce	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4	xcept Living Roo	<u>Secon</u> V C C S ts (C3) G	Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS Seomorphic Position (D2) Shallow Aquitard (D3)
Sandy w YDROLOGY Vetland Hydrology Indicator rimary Indicators (minimum o 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)	s:	check all that appl Water-Stai MLRA Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Rhizosphe of Reduce n Reducti	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 on in Tille	xcept Living Roo I) d Soils (C6	<u>Secon</u> V C C S ts (C3) S S S	Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Gaturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Ghallow Aquitard (D3) (AC-Neutral Test (D5)
Sandy w YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 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)	s: fone required; d	check all that appl Water-Stai MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Rhizosphe of Reduce n Reducti Stressed	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D	xcept Living Roo I) d Soils (C6	<u>Secon</u> V C C S ts (C3) S S S F	Vater-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) (AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Sandy w Verland Hydrology Indicator Trimary Indicators (minimum o 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 Aeria	s: fone required; d	check all that appl Water-Stai MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Rhizosphe of Reduce n Reducti Stressed	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D	xcept Living Roo I) d Soils (C6	<u>Secon</u> V C C S ts (C3) S S S F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5)
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YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 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 Aeria Sparsely Vegetated Conca	s: fone required; o al Imagery (B7) ave Surface (B8	<u>check all that appl</u> Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp)	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re	es (B9) (e and 4B) es (B13) dor (C1) res along ed Iron (C4 ion in Tille Plants (D emarks)	xcept Living Roo I) d Soils (C6 1) (LRR A)	<u>Secon</u> V C C S ts (C3) S S S F	Vater-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)
YDROLOGY Vetland Hydrology Indicator 'rimary Indicators (minimum o 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 Aeria Sparsely Vegetated Conca 'ield Observations:	s: fone required; of al Imagery (B7) ave Surface (B8 Yes No	check all that appl Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (inv	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed plain in Re	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D emarks)	xcept Living Roo I) d Soils (C6 1) (LRR A)	<u>Secon</u> V C C S ts (C3) S S S F	Vater-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)
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YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 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 Aeria Sparsely Vegetated Conca Field Observations: Surface Water Present? Water Table Present?	s: fone required; of al Imagery (B7) ave Surface (B8 Yes No Yes No	<u>check all that appl</u> <u>Water-Stai</u> <u>MLRA</u> <u>Salt Crust</u> <u>Aquatic Inv</u> <u>Hydrogen</u> <u>Oxidized F</u> <u>Presence</u> <u>Recent Iro</u> <u>Stunted or</u> <u>Other (Exp</u>)	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed plain in Re ches):	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D emarks) 9 ()	xcept Living Roo I) d Soils (C6 1) (LRR A)	Secon V C C S S S S F F	Vater-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)
Sandy w YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 	s: fone required; of al Imagery (B7) ave Surface (B8 Yes No Yes No Yes No	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp) Depth (inv Depth (inv	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Reduce of Reduce n Reducti Stressed plain in Re ches): ches): ches):	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D emarks) 9 () 9 () 9 ()	xcept Living Roo I) d Soils (C6 1) (LRR A)	Secon V C C S ts (C3) S S F F F F and Hydrolog	Vater-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) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Sandy w YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 	s: fone required; of al Imagery (B7) ave Surface (B8 Yes No Yes No Yes No	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp) Depth (inv Depth (inv	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Reduce of Reduce n Reducti Stressed plain in Re ches): ches): ches):	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D emarks) 9 () 9 () 9 ()	xcept Living Roo I) d Soils (C6 1) (LRR A)	Secon V C C S ts (C3) S S F F F F and Hydrolog	Vater-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) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
YDROLOGY Primary Indicators (minimum o 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 Aeria	s: fone required; of al Imagery (B7) ave Surface (B8 Yes No Yes No Yes No	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp) Depth (inv Depth (inv	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Reduce of Reduce n Reducti Stressed plain in Re ches): ches): ches):	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D emarks) 9 () 9 () 9 ()	xcept Living Roo I) d Soils (C6 1) (LRR A)	Secon V C C S ts (C3) S S F F F F and Hydrolog	Vater-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) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Sandy w YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 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 Aeria Sparsely Vegetated Conce Vater Table Present? Vater Table Present? Saturation Pres	s: fone required; of al Imagery (B7) ave Surface (B8 Yes No Yes No Yes No	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp) Depth (inv Depth (inv	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Reduce of Reduce n Reducti Stressed plain in Re ches): ches): ches):	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D emarks) 9 () 9 () 9 ()	xcept Living Roo I) d Soils (C6 1) (LRR A)	Secon V C C S ts (C3) S S F F F F and Hydrolog	Vater-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) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Sandy w YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum o 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 Aeria Sparsely Vegetated Conce Vater Table Present? Vater Table Present? Vater Table Present? Saturation Present? Saturation Present? Mater Table Present? Saturation Pr	s: fone required; of al Imagery (B7) ave Surface (B8 Yes No Yes No Yes No	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp) Depth (inv Depth (inv	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Or Reduce of Reduce n Reducti Stressed plain in Re ches): ches): ches):	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille Plants (D emarks) 9 () 9 () 9 ()	xcept Living Roo I) d Soils (C6 1) (LRR A)	Secon V C C S ts (C3) S S F F F F and Hydrolog	Vater-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) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)

				state: WA Sampling Point: W-V
estigator(s): B. Horton, S. Caru				
				convex, none): Concaus Slope (%): 3%
				Long: 121, 528.368 Datum: NAD8
Map Unit Name: Unmapped-res	erugir	sedim	ents	NWI classification: PFo
climatic / hydrologic conditions on the site typical for		-		
				Normal Circumstances" present? Yes No
Vegetation N , Soil N , or Hydrology N				eded, explain any answers in Remarks.)
MMARY OF FINDINGS – Attach site ma	p showing	samplin	g point lo	ocations, transects, important features, etc.
ydrophytic Vegetation Present? Yes X	No		- 10 m	
vdric Soil Present? Yes X		Is th	e Sampled	Area nd? Yes X No
etland Hydrology Present? Yes 🔨	No			and the second of the second se
emarks: This feature is con	posed	prin	nari	hy of vohunteen
otton woods supported	boa	Seepo	2005	shane at The base cou
STATUS AND ANY THE REPORT OF THE REPORT OF THE		- [9-1	
GETATION – Use scientific names of pl		_		
ee Stratum (Plot size:)	Absolute % Cover			Dominance Test worksheet:
		openes		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
				Total Number of Dominant Species Across All Strata:(B)
		= Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
pling/Shrub Stratum (Plot size:)			F.A.	Prevalence Index worksheet:
Populus balsamiFera	_ 60	<u> </u>	FAC.	Total % Cover of: Multiply by:
				OBL species x 1 =
				FACW species x 2 =
				FAC species x 3 =
	- 10			FACU species x 4 =
erb Stratum (Plot size:)	60	= Total Co	ver	UPL species x 5 =
Juncus effusus	30	Y	FACW	Column Totals: (A) (B)
Lotus corniculatus	15		FAC	Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
				I - Rapid Test for Hydrophytic vedetation
				 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50%
				X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹
		_		 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting
		_		 X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
		=		 X 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
				 X 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)
				 X 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
				 X 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)
				 X 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.
body Vine Stratum (Plot size:)				 X 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.
 				 X 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.
				 X 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.

US Army Corps of Engineers

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OF The slope. Access To Wethand V is himited to river side access From a raft. At The Time of 2016 Site visit, The Local raft companies were Not running the Lower river, Wethand Parameters Were Largely estimated from Three vantage points Using binoculars, Wetland indicators were inferred based on 2014 site investigation.

SOIL

Sampling Point: W-V

Profile Des	scription: (Describe	to the dept	h needed to docum	nent the	indicator	or confirm	m the absence o	of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	00	Color (moist)		Type ¹	Loc ²	Texture	Remarks
0-8	104B2/2	75	104B 5/8	_5_	5	m	Sand.	
	· · · · · · · · · · · · · · · · · · ·			2			1	
			(
							· · · · · · · · · · · · · · · · · · ·	
							· · · · · · · · · · · · · · · · · · ·	
	-							
-					-	100100		
	Concentration, D=Dep I Indicators: (Applic					ed Sand G		ation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
					eu.)			
Histoso		- Pa	X Sandy Redox (S					Muck (A10)
	Epipedon (A2)		Stripped Matrix		1) /			Parent Material (TF2)
	Histic (A3)		Loamy Mucky M			MLRA 1		Shallow Dark Surface (TF12)
	en Sulfide (A4) ed Below Dark Surfac	e (A11)	Loamy Gleyed I Depleted Matrix	1.	.)		Other	r (Explain in Remarks)
	Dark Surface (A12)	C(A11) .	Redox Dark Sur				³ Indicator	s of hydrophytic vegetation and
the second secon	Mucky Mineral (S1)		Depleted Dark S					d hydrology must be present,
	Gleyed Matrix (S4)	1000	Redox Depress		1			disturbed or problematic.
	Layer (if present):							
	Bedrock						1.11	
Depth (in	A .		_				Hydric Soil F	Present? Yes X No
							and the second second second second	site safely. The 2014
HYDROLO								
	ydrology Indicators:		A . Le lan					
Primary Ind	icators (minimum of o	ne required	; check all that apply	Y)				dary Indicators (2 or more required)
X Surface	e Water (A1)		Water-Stai	ned Leav	es (B9) (e	xcept	Wa	ater-Stained Leaves (B9) (MLRA 1, 2,
High W	later Table (A2)		MLRA	1, 2, 4A, a	and 4B)			4A, and 4B)
Saturat	tion (A3)		Salt Crust	(B11)			Dra	ainage Patterns (B10)
Water	Marks (B1)		Aquatic Inv	vertebrate	es (B13)		Dr	y-Season Water Table (C2)
Sedime	ent Deposits (B2)		Hydrogen :	Sulfide O	dor (C1)		Sa	turation Visible on Aerial Imagery (C9)
Drift De	eposits (B3)		Oxidized R	hizosphe	res along	Living Ro	ots (C3) X Ge	eomorphic Position (D2)
Algal M	lat or Crust (B4)		Presence of	of Reduce	ed Iron (C4	4)	Sh	allow Aquitard (D3)
	posits (B5)		Recent Iron					C-Neutral Test (D5)
	e Soil Cracks (B6)		Stunted or					ised Ant Mounds (D6) (LRR A)
	tion Visible on Aerial I	magery (B7						ost-Heave Hummocks (D7)
Sparse	ly Vegetated Concave	Surface (B	(8)		and the second			
Field Obse						1		
		es X N	lo Depth (inc	ches):				
Water Table						_		
	Propert? V	X	lo X Depth (inc	abos):		Wet	and Hydrology	Present? Yes X No
Saturation F (includes ca	apillary fringe)	es r	o Depth (inc	ines).		- wet	ianu nyurology	
	ecorded Data (stream	gauge, mor	nitoring well, aerial p	photos, pr	evious ins	pections),	if available:	
Remarks:	(7.	1.5	-	1.1.1.1	-			NTI
	Sileisa.	Sprin	g ted -	see	pat	The	base	otthe
C	1 .	1	d	. !			Q	
2	lope a	6000	The U	Ohi	Te 2	Jali	mon P	of The iver
	1	1000				1 (S)		

WETLAND DETERMINATION DATA FORM – Western Mountains,	Valleys.	, and Coast Region
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Project/Site: Condit City/County: Skamania Sampling Date: 7/211	16
Applicant/Owner: Pacifi Corp State: WA Sampling Point: W-V-U	111
Investigator(s): B, HorTon, S. Car uana Section, Township, Range: S3-T3N RIOE	_
Landform (hillslope, terrace, etc.): Hill_slope Local relief (concave, convex, none): Convex Slope (%): 15	5
Subregion (LRR): A Lat: 45.777506 Long: 121.528301 Datum: NAD	33
Soil Map Unit Name: In mapped - reservoir Sediments NWI classification:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X 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? Hydric Soil Present? Wetland Hydrology Present?*	Yes <u>X</u> Yes Yes	No X No X No X	Is the Sampled Area within a Wetland?	Yes	No_X	
Remarks: Uphand da	.Ta ba	sed on	2014 Survey			

VEGETATION - Use scientific names of plants.

J - 'Y

Tree Stratum (Plot size:) % Cover Species? Status Number of Dominant Species	(A)
1 That Are OBL, FACW, or FAC:	(A)
2 Total Number of Dominant	- Ca. 1
3 Species Across All Strata:	(B)
4 Percent of Dominant Species	and the state
= Total Cover That Are OBL, FACW, or FAC: LO	6 (A/B)
Sapling/Shrub Stratum (Plot size:) Prevalence Index worksheet:	
1 Total % Cover of: Multipl	y by:
2 OBL species x 1 =	
3 FACW species x 2 =	
4 FAC species x 3 =	
5 FACU species x 4 =	
- Total Cover	
Herb Stratum (Plot size:) UPL species x 5 =	
1. Lupinus abbicaulus 30 4 FAC Column Totals: (A)	(B)
2. Bromus marginatus 15 Prevalence Index = B/A =	
3. Festuca vubida 20 FAC Hydrophytic Vegetation Indicators:	
4. LOTUS CONNICULATUS 10 FAC 1- Rapid Test for Hydrophytic Veget	ation
5 2 - Dominance Test is >50%	
6 3 - Prevalence Index is ≤3.0 ¹	
7 4 - Morphological Adaptations ¹ (Prov	vide supporting
8 data in Remarks or on a separate	sheet)
9 5 - Wetland Non-Vascular Plants ¹	
Restlemetia Understudio Versitation	(Explain)
10	
11 be present, unless disturbed or problema	
Woody Vine Stratum (Plot size:)	
1 Hydrophytic	
Present? Yes X No	
% Bare Ground in Herb Stratum = Total Cover	
Remarks:	

Profile Descriptio	on: (Describe to	o the depth	needed to document the indicator or confirm		ng Point: <u>W</u> -V-
Depth	Matrix		Redox Features	and associate of mandatoroly	
	Color (moist)	%	Color (moist) % Type ¹ Loc ²	Re	emarks
0-16 10	YB 3/1	100		Sand	
		_			
			Reduced Matrix, CS=Covered or Coated Sand Gra RRs, unless otherwise noted.)	ains. ² Location: PL=Pore L Indicators for Problemat	
Histosol (A1)	ators: (Applica				ac riyune oons .
Histic Epipedo	00 (42)	-	_ Sandy Redox (S5) _ Stripped Matrix (S6)	2 cm Muck (A10) Red Parent Material (TE2)
Black Histic (A			Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Su	
Hydrogen Sul		, 	Loamy Gleyed Matrix (F2)	Other (Explain in Ren	
_ , ,	ow Dark Surface	(411) -	_ Depleted Matrix (F3)		laiks)
Thick Dark Su		(411) -	Redox Dark Surface (F6)	³ Indicators of hydrophytic	vegetation and
Sandy Mucky		-	_ Depleted Dark Surface (F7)	wetland hydrology mus	
Sandy Mucky Sandy Gleyed		-	_ Redox Depressions (F8)	unless disturbed or pro	
Restrictive Layer				unless disturbed of pro	blematic.
Type:	1.1			10 m	
Depth (inches):				Hydric Soil Present? Yes	No X
				The second second second second	
	ol îs	100%	rEservoir deposit	sand	
Wetland Hydrolog	gy Indicators:				
Primary Indicators	(minimum of on	e required;	check all that apply)	Secondary Indicators (2	2 or more required)
Surface Water	r (A1)		Water-Stained Leaves (B9) (except	Water-Stained Lear	ves (B9) (MLRA 1, 2,
High Water Ta	able (A2)		MLRA 1, 2, 4A, and 4B)	4A, and 4B)	
Saturation (A3			Salt Crust (B11)	Drainage Patterns	(B10)
Water Marks (Aquatic Invertebrates (B13)	Dry-Season Water	
Sediment Dep			Hydrogen Sulfide Odor (C1)		on Aerial Imagery (CS
Drift Deposits			Oxidized Rhizospheres along Living Root		
Algal Mat or C			Presence of Reduced Iron (C4)	Shallow Aquitard (E	
_ rugar mat 01 C	1031 (04)				55)

Recent Iron Reduction in Tilled Soils (C6)

____ Stunted or Stressed Plants (D1) (LRR A)

___ Other (Explain in Remarks)

 Yes
 No
 X
 Depth (inches):

 Yes
 No
 X
 Depth (inches):

Yes _____ No ___ Depth (inches): __

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

Iron Deposits (B5)

Field Observations: Surface Water Present?

Water Table Present?

Saturation Present?

____ Surface Soil Cracks (B6)

Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

Remarks:

FAC-Neutral Test (D5)

Wetland Hydrology Present? Yes

____ Frost-Heave Hummocks (D7)

Raised Ant Mounds (D6) (LRR A)

No

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region City/County: Skamania Sampling Date: 7/19/16 Project/Site: Condit State: W/A Sampling Point: W - X Applicant/Owner: PacifiCorp Investigator(s): B. HorTon S. Caruana Section, Township, Range: SID - T.3N- BIOF Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2% Lat: 45.767345 Long: 7/21.538933 Datum: NAD 83 Subregion (LRR): Soil Map Unit Name: Unmapped - reservoir sediments (cliff) NWI classification: PEM Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) Are "Normal Circumstances" present? Yes X No Are Vegetation N, Soil N, or Hydrology M significantly disturbed? Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Yes X No Hydrophytic Vegetation Present? Is the Sampled Area Yes X No____ Hydric Soil Present? within a Wetland? Yes X No Wetland Hydrology Present? Remarks: Swep originates from hillsiope and Trickles onto The bench above The former dam Location. Standing water present VEGETATION - Use scientific names of plants. Absolute Dominant Indicator **Dominance Test worksheet:** Tree Stratum (Plot size:) % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC: (A) 1. 2. Total Number of Dominant (B) Species Across All Strata: 3. Percent of Dominant Species 00 = Total Cover That Are OBL, FACW, or FAC: (A/B) Sapling/Shrub Stratum (Plot size: _____) Prevalence Index worksheet: 1._____ Total % Cover of: Multiply by: 2. OBL species _____ x 1 = _____ 3 FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = ____ = Total Cover x 5 = UPL species Herb Stratum (Plot size: r= 5' (A) (B) 20 N Column Totals: 1. Holcus lanate 2. Mimulus du Talus 60 Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 3. Hordeum Obrachyan Therum 25 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 5 ____ 3 - Prevalence Index is ≤3.0¹ 6. 4 - Morphological Adaptations¹ (Provide supporting 7. data in Remarks or on a separate sheet) 8.

= Total Cover

9

10.

11.

5 - Wetland Non-Vascular Plants¹

be present, unless disturbed or problematic.

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must

offie Descrip	ption: (Describe 1	to the dept	h needed to docun		tor or comm	in the absence of	
epth _	Matrix			K Features	e ¹ Loc ²	Texture	Remarks
iches)	Color (moist)	%	Color (moist)	<u>% Typ</u>		Silt Icam	
2-4_	104R 5/1	100				SILLICAM	
	,	·					took component
ype: C=Cor	ncentration, D=Dep	letion, RM=	Reduced Matrix, CS	S=Covered or C	oated Sand (Grains. ² Loca	tion: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
dric Soil In	dicators: (Applic	able to all	LRRs, unless othe				
_ Histosol (/			Sandy Redox (Muck (A10) Parent Material (TF2)
Black Hist			Stripped Matrix Loamy Mucky	Mineral (F1) (ex	cept MLRA	1) Very	Shallow Dark Surface (TF12) (Explain in Remarks)
	Sulfide (A4)	- 10.4.43	Loamy Gleyed				(
	Below Dark Surfac k Surface (A12)	e (A11)	Redox Dark Su			³ Indicator	s of hydrophytic vegetation and
	ucky Mineral (S1)		Depleted Dark			wetlan	d hydrology must be present,
	eyed Matrix (S4)		Redox Depress			unless	disturbed or problematic.
	ayer (if present):						
	sedrock	(10
Type.	11					Hydric Soil I	Present? Yes X No
Death (incl	hog):	i ka				inganie een	
Depth (incl Remarks: 4 A		gula	r rock conctru	indice ction	rubba		
YDROLOG	obly an nd is an		r rock conctru	indice ction	rubbl		nicar Fill Materia
YDROLOC Vetland Hyd	obly an nd is an GY Irology Indicators	:			rubby	histor e	
YDROLOC Vetland Hyd	obly an nd Dan GY Irology Indicators ators (minimum of	:	d; check all that app	ly)		histor e Secon	dary Indicators (2 or more required)
YDROLOC Vetland Hyd Y Surface	obly an nd Dan GY Irology Indicators ators (minimum of Water (A1)	:	d; check all that app Water-Sta	lly) ained Leaves (E	9) (except	histor e Secon	dary Indicators (2 or more required)
YDROLOC Vetland Hyd Primary Indica X Surface V High Wat	obly an nd Ban GY Irology Indicators ators (minimum of Water (A1) ter Table (A2)	:	d; check all that app Water-Sta MLRA	oly) ained Leaves (E 1, 2, 4A, and 4	9) (except	histor e <u>Secon</u> _ W	dary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2
YDROLOC Vetland Hyd Primary Indica X Surface V High Wat X Saturatio	and Ban GY Irology Indicators ators (minimum of Water (A1) ter Table (A2) on (A3)	:	d; check all that app Water-Sta MLRA Salt Crus	bly) ained Leaves (E 1 , 2, 4A, and 4 t (B11)	9) (except B)	histor e <u>Secon</u> _ W _ D	dary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
YDROLOC Vetland Hyd Primary Indica X Surface V X High Wat X Saturatio Water Ma	GY Irology Indicators ators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)	:	d; check all that app Water-Sta MLRA Salt Crus Aquatic In	bly) ained Leaves (E 1, 2, 4A, and 4 t (B11) hvertebrates (B ¹	9) (except IB) 13)	histor e <u>Secon</u> _ W _ D	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10)
YDROLOC Vetland Hyd Primary Indica X Surface V High Wat X Saturatio Water Ma Sedimen	GY Irology Indicators ators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2)	:	d; check all that app Water-Sta Salt Crus Salt Crus Aquatic In Hydroger	ained Leaves (E 1, 2, 4A, and 4 t (B11) nvertebrates (B ² n Sulfide Odor (1	9) (except 18) 13) C1)	histor e <u>Secon</u> w _ _ _ _ Secon	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (CS
YDROLOC Vetland Hyd YDROLOC Vetland Hyd Ymmary Indica X Surface V X High Wat X Saturatio Water Ma Sedimen Drift Dep	ators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3)	:	d; check all that app Water-Sta Salt Crus Salt Crus Aquatic Iu Hydroger Oxidized	ained Leaves (E 1, 2, 4A, and 4 t (B11) nvertebrates (B ² n Sulfide Odor (Rhizospheres a	9) (except IB) 13) C1) Ilong Living F	hrsTor e <u>Secon</u> w D D D Soots (C3) _ G	dary Indicators (2 or more required) dater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2)
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YDROLOC YDROLOC YDROLOC Yetland Hyd Primary Indica Y Surface Water Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface Saturation Primary Indica Yetland Hyd Sedimen Drift Dep Algal Ma Iron Dep Surface Water Surface Water Surface Water Surface Water Surface Water Surface Reference Saturation Pri (includes cap Describe Reference)	ators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concar vations: er Present? Present? present? present? poilary fringe) corded Data (strea	: one require	d; check all that app Water-Sta MLRA Salt Crus Aquatic In Hydroger Oxidized Presence Recent In Stunted (2) 37) Other (E) (B8) No Depth (0) No	Aly) ained Leaves (E 1, 2, 4A, and 4 t (B11) nvertebrates (B' n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remar anches): inches): inches): I photos, previo	9) (except B) 13) C1) long Living F on (C4) on (C4) on tis (D1) (LRF ks) us inspection	hrsTor Secon	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C2 eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) y Present? Yes No
Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Vater Ma Saturation Drift Dep Algal Ma Iron Dep Surface Vater Surface Vater Vater Table Saturation Pro (includes cap Describe Red	ators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concar vations: er Present? Present? present? present? poilary fringe) corded Data (strea	: one require	d; check all that app Water-Sta MLRA Salt Crus Aquatic In Hydroger Oxidized Presence Recent In Stunted (2) 37) Other (E) (B8) No Depth (0) No	Aly) ained Leaves (E 1, 2, 4A, and 4 t (B11) nvertebrates (B' n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remar anches): inches): inches): I photos, previo	9) (except B) 13) C1) long Living F on (C4) on (C4) on tis (D1) (LRF ks) us inspection	hrsTor Secon	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (Cl eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)

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

Project/Site: <u>Condit</u>	City/County: Sk	lamania	Sampling Date: 7/1	9/16
Applicant/Owner: PacifiCorp		State: WA	Sampling Point: W-x	-upl
nvestigator(s): B. HorTon, S.				1
andform (hillslope, terrace, etc.): Hillsl		ave. convex. none): Con	cave Slope (%)	5%
Subregion (LRR):A		6 Long -121.5	38944 Datum: N	ADS
Soil Map Unit Name: Unmapped- Fo				
Are climatic / hydrologic conditions on the site type				
		Are "Normal Circumstances		lo
re Vegetation N, Soil N, or Hydrolog				
Are Vegetation N , Soil N , or Hydrolog		(If needed, explain any answ		Sec.
SUMMARY OF FINDINGS - Attach s	ite map showing sampling poi	nt locations, transec	ts, important feature	es, etc.
Hydrophytic Vegetation Present? Yes	X No			
Hydric Soil Present? Yes	No X Is the Sam	pled Area	No X	
Wetland Hydrology Present? Yes	No X within a W	etland? Yes	NO	
VEGETATION – Use scientific names Tree Stratum (Plot size:) 1	Absolute Dominant Indica <u>% Cover Species? Statu</u>	PERSONAL SECOND EXCLUSION OF A DATA SECOND SECONDO SECONDO SECONDO SECONDOS SECONDOS SECONDOS SECONDOS SECONDOS	Species 7	(A)
2 3 4		Total Number of Don Species Across All S Percent of Dominant	trata: <u> </u>	(B)
3	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV	trata: <u>3</u> Species V, or FAC: <u>100</u>	
3	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w	trata: <u> </u>	(A/B)
3 4 Sapling/Shrub Stratum (Plot size:	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w Total % Cover o	trata: <u>5</u> Species V, or FAC: <u>100</u> orksheet: f: <u>Multiply by:</u>	_ (A/B)
3 4 <u>Sapling/Shrub Stratum</u> (Plot size: 1	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w Total % Cover o OBL species	trata:	_ (A/B)
3.	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w	trata:	(A/B)
3.	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w	trata:	(A/B)
3.	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w	trata:	(A/B)
3.	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w	trata:	(A/B)
3 4 1 2 3 4 5 Herb Stratum (Plot size: $r = 5^{\circ}$) 1 Herb Stratum (Plot size: $r = 5^{\circ}$) 1 Herb Stratum (Plot size: $r = 5^{\circ}$)	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w Total % Cover o OBL species FACW species FAC species FACU species UPL species Column Totals:	trata:	_ (A/B) (B)
3.	= Total Cover	Species Across All S Percent of Dominant That Are OBL, FACV Prevalence Index w Total % Cover o OBL species FACW species FAC species FACU species UPL species Column Totals:	trata:	_ (A/B) (B)

7		4 - Morphological Adaptations ¹ (Provide supporting
8		data in Remarks or on a separate sheet)
9		5 - Wetland Non-Vascular Plants ¹
10.		Problematic Hydrophytic Vegetation ¹ (Explain)
11		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)	= Total Cover	
1		Hydrophytic
2		Vegetation Present? Yes X No
	= Total Cover	
% Bare Ground in Herb Stratum		
Remarks: Area is rocky and p	onimarily de	uoid of vegetation

US Army Corps of Engineers

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5.

6.

X 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

IL ofile Description: (Describe	to the denth n	eeded to docum	ent the indi	icator or o	confirm	the absence of	indicators.)	
이야지 않는 것이 같은 것이 같이 많이 많이 많이 많이 했다.	to the depth i		Features	outor or				
epth <u>Matrix</u> nches) Color (moist)	%	Color (moist)	% T	vpe'	Loc ²	Texture	Remark	s
10 45				1		Loom CIT	Angular .	Fill
5-2 104R 43	100 _					- and a lot		
							male	nral
		·			_			
vpe: C=Concentration, D=Dep	letion, RM=Re	duced Matrix, CS	-Covered or	r Coated S	Sand Gra		ion: PL=Pore Lining	
dric Soil Indicators: (Applic	able to all LR	Rs, unless otherw	vise noted.)		Indicators	for Problematic Hy	dric Soils ³ :
Histosol (A1)		Sandy Redox (S				2 cm M	Muck (A10)	
Histic Epipedon (A2)		Stripped Matrix (arent Material (TF2)	
Black Histic (A3) Hydrogen Sulfide (A4)	_	Loamy Mucky M Loamy Gleyed M	ineral (F1) (except M	ILRA 1)		Shallow Dark Surface (Explain in Remarks	
Depleted Below Dark Surfac	e (A11)	Depleted Matrix						
Thick Dark Surface (A12)		Redox Dark Sur					of hydrophytic vege	
Sandy Mucky Mineral (S1)		Depleted Dark S					hydrology must be	
Sandy Gleyed Matrix (S4)		Redox Depression				unless	disturbed or problem	atic.
estrictive Layer (if present):								
Type: rock								
Depth (inches): 2 in		a second second second				Hydric Soil P	resent? Yes	No X
Deptil (interies).						ingane cont		
	rea u	oith m	inim	al s	Soil			
rocky a rocky a		oith m	inim	al s	501			
POCKY C VDROLOGY				ial s	501	abou		c K
POCKY A DROLOGY Vetland Hydrology Indicators		check all that apply	0			abou 4	e bedroo	more required)
Proc Ky a DROLOGY Vetland Hydrology Indicators rimary Indicators (minimum of _ Surface Water (A1)		check all that apply Water-Stain	ned Leaves	(B9) (exc		<u>abou</u> <u>Second</u> Wa	e bedroo	more required)
DROLOGY etland Hydrology Indicators imary Indicators (minimum of Surface Water (A1) High Water Table (A2)		check all that apply Water-Stain MLRA 1	ned Leaves	(B9) (exc		<u>Second</u>	e bedroo	more required) (B9) (MLRA 1, 2,
DROLOGY etland Hydrology Indicators imary Indicators (minimum of r Surface Water (A1) High Water Table (A2) Saturation (A3)		check all that apply Water-Stain MLRA 1 Salt Crust (7) ned Leaves I, 2, 4A, and (B11)	(B9) (exc d 4B)		<u>Second</u> Wa Dra	e bedroo lary Indicators (2 or n iter-Stained Leaves 4A, and 4B) ainage Patterns (B10	more required) (B9) (MLRA 1, 2,
DROLOGY etland Hydrology Indicators imary Indicators (minimum of r Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		check all that apply Water-Stain Salt Crust (Aquatic Inv	ned Leaves I, 2, 4A, and (B11) rertebrates ((B9) (exc d 4B) (B13)		<u>Second</u> Wa Dra Dra	ary Indicators (2 or r Inter-Stained Leaves (4A, and 4B) ainage Patterns (B10 -Season Water Tab	more required) (B9) (MLRA 1, 2,)) le (C2)
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Proceedings of the second dependence of the se	Imagery (B7) ve Surface (B8 Yes No Yes No Yes No Yes No Yes No	check all that apply Water-Stain MLRA 1 Salt Crust (Aquatic Inv Aquatic Inv Hydrogen S Oxidized R Presence G Recent Iron Stunted or Other (Exp) Depth (ing Y Depth (ing toring well, aerial p	ned Leaves 1, 2, 4A, and (B11) rertebrates (Sulfide Odor thizosphere: of Reduced n Reduction Stressed Pl dain in Rem ches): ches): ches): photos, prev	(B9) (exc d 4B) (B13) r (C1) s along Li Iron (C4) n in Tilled 3 lants (D1) harks)	cept iving Roo Soils (C6) (LRR A		e bedroc lary Indicators (2 or n iter-Stained Leaves (4A, and 4B) ainage Patterns (B10 A-Season Water Tab turation Visible on Ad omorphic Position (D allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D0 ost-Heave Hummock	E K <u>more required)</u> (B9) (MLRA 1, 2,)) le (C2) erial Imagery (C9) (C2) 6) (LRR A) (C2) (C2) (C2) (C2) (C2) (C2) (C2) (C3)
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rojectsile	WETLAND DETERMINATION DA				
applicant/Owner: Pactor FLCOrp Site: WA sample Point: Way westgator(s): D. HorTon Scanceron Section, Township, Range: SS: T.S.N ~ BIOE androm (hildipo, terrae, etc.): HillSlope Locar relef (concave, convex, none): Canceron Site: WA sample Point: Way Salid Mo Unit Name: An apped - Yes (cruci)' (sed Nin ATS) No (fin excellant and sastificant) (statume Yay No	Project/Site: Condit	Cit	y/County: Klic	KiTat	Sampling Date: 7/20/16
nvestigator(s): <u>B.</u> <u>HorTon</u> <u>S.Carcana</u> <u>section</u> , Township, Range: <u>S3</u> : <u>T</u> <u>3N</u> _RIGE androm (hilstop, terrace, etc.): <u>HillSlope</u> Lat <u>HS</u> : <u>TZRODE</u> Long <u>TZLI</u> <u>55618</u> _Datum: NADE subregion (LRR): <u>A</u> <u>15567</u> _Concert NVM classification: <u>PSS</u> <u>v</u> ; <u>pariet</u> ve denatic / hydrology <u>A</u> significantly disturber? NVM classification: <u>PSS</u> <u>v</u> ; <u>pariet</u> ve denatic / hydrology <u>A</u> significantly disturber? NVM classification: <u>PSS</u> <u>v</u> ; <u>pariet</u> ve vegetation <u>A</u> _soit <u>A</u> _or Hydrology <u>A</u> significantly disturber? NVM classification: <u>PSS</u> <u>v</u> ; <u>pariet</u> ve vegetation <u>A</u> _soit <u>A</u> _or Hydrology <u>A</u> significantly disturber? NVM classification: <u>PSS</u> <u>v</u> ; <u>pariet</u> ve vegetation <u>A</u> _soit <u>A</u> _or Hydrology <u>A</u> significantly disturber? NVM classification: <u>PSS</u> <u>v</u> ; <u>pariet</u> ve vegetation <u>Present</u> ? <u>ves</u> <u>x</u> <u>No</u> is the <u>Sampled Area</u> <u>within a Wetland</u> ? <u>ves</u> <u>x</u> <u>No</u> NVM classification <u>Present</u> ? <u>ves</u> <u>x</u> <u>No</u> is the <u>Sampled Area</u> <u>within a Wetland</u> ? <u>ves</u> <u>x</u> <u>No</u> <u>The Survey</u> <u>Hydro Soit Present</u> ? <u>ves</u> <u>x</u> <u>No</u> <u>No</u> <u>A</u> <u>Remarks</u> <u>W</u> <u>E</u> <u>T</u> <u>and</u> <u>is</u> <u>s</u> <u>inm</u> <u>e</u> <u>d</u> <u>c</u> <u>a</u> <u>Cart</u> <u>s</u> <u>v</u> <u>a</u> <u>Cart</u> <u>s</u> <u>v</u> <u>a</u> <u>Cart</u> <u>s</u> <u>v</u> <u>s</u> <u>x</u> <u>No</u> <u>The Survey</u> <u>Tarta Ford</u> <u>F</u> <u>A</u> <u>CA</u> <u>N</u> <u>v</u> <u>s</u> <u>x</u> <u>No</u> <u>Cartanton - Use <u>Scientiff</u><u>c</u> names of plants. <u>Tree Stratum</u> (Plot size: <u>Ascitt</u><u>Sistet</u><u>Sistet</u><u>Sistet</u><u>Sistet</u><u>Sistet</u><u>Sistet</u><u>Sistet</u><u>Sistet</u><u>Sistet</u><u>Cart</u><u>x</u><u>s</u><u>x</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u><u>s</u></u>	Applicant/Owner: PacifiCorp			State: WA	Sampling Point: W-V
androm (nilislope, terrace, etc.): HillslapeLoat relief (concave, convex, none): CDCQUSlope (8): 52 Subregion (LRR):AAA	investigator(s): B Horton Cara	ana. Se	ction, Township, Ra	nge: 53-T3	N-RIDE /
bibregion (LRR): A Lat <i>TS</i> , 7/ACOL Long: 7/21, 556/25 Datum NADE biol Map Unit Name: In mapped - Yes (e woir) Sediments NWI dessification PSS - riportial biol Map Unit Name: Are 'Normal Circumstances' present? Yes X No vie Vegetation AL Soil AL or Hydrology AL naturally problematic? Are 'Normal Circumstances' present? Yes X No vie Vegetation Present? Yes X No It needs caplain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc He Sampled Area Hydrophytic Vegetation Present? Yes X No Is the Sampled Area Wetland Hydrology Present? Yes X No Is the Sampled Area Wetland Hydrology Present? Yes X No The Survey Remarks: Wetland Hydrology Common Species The Survey Capling Chinub Stratum (Piot size: Absolute Dominant Indicator Saping/Shrub Stratum (Piot size: Absolute Dominant Species Ac 1. Saping/Shrub Stratum (Piot size: Facult Species Ac Facult Species Ac 2. Saping/Shrub Stratum (Piot size: Facult Spe	andform (hillslope terrace etc.): Hillslope		cal relief (concave.)	convex. none): Conc	ave Slope (%): 52
Soil Map Unit Name: A map ped -Yeser Coir Sed in Period No (If no, explain in Remarks.) Vere Vegetation / L. Soil /	Subsection (I BB):	1 at 45	772006	Long: -121. 53	3618 Datum: NAD 8
ver climatic / hydrologic conditions on the site typical for this time of year? Yes	Sublegion (LRR).	nuoir a	codiment	S NWI classifi	cation PSS- vioa righ
vre Vegetation AL. Soil Y. or Hydrology AL significantly disturbed? Are "Normal Circumstances" present? Yes X. No					
vre Vegetation Å_ Solt Å_, or Hydrology Å_ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophylic Vegetation Present? Yes X_ No					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc Hydrophytic Vegetation Present? Yes X No Hydrophytic Vegetation Present? Yes X No Remarks: WeTland is immedicately about Ting an unmapped STream For The majority of iTs extent, Stream wasfload and unmapped Stream For The majority of iTs extent, Stream wasfload and unmapped Stream Tree Stratum (Plot size: Absolut 1 % Cover Stream 2 Absolut 3 Stream 4 = Total Cover 2 = Total Cover 1 Stratum (Plot size: 3 = Total Cover 1 Stratum (Plot size: 2 = Total Cover 1 Stratum (Plot size: 3 = Total Cover Herd Stratum (Plot size: = Total Cover 2 = Total Cover Herd Stratum (Plot size: = Total Cover 1 Stratum (Plot size: 2 = Total Cover 1 Total Number of Idex worksheet: 1 Total Cover Herd Stratum (Plot size: <					
Hydrophytic Vegetation Present? Yes X No Is the Sampled Area Hydric Soil Present? Yes X No within a Wetland? Yes X No Wetland Hydrology Present? Yes X No within a Wetland? Yes X No Remarks: Wetland Hydrology Present? Yes X No within a Wetland? Yes X No Fig. 2 Yes X No absolute Ommant Indicator The Survey VEGETATION - Use Scientific names of plants. Dominant Indicator Total Number of Dominant Species (A) 1					
Hydric Soil Present? Yes X No Is the Sampled Area Remarks: W &Tl and is immedicately about Ting an unmapped S7ream Acount The majority of its extent, Stream was Flowing at the Time of The Survey //EGETATION - Use Scientific names of plants. 1 Absolute Dominant Indicator 2 Absolute Dominant Indicator 3 Absolute Dominant Indicator 4 Total Number of Dominant Species 2 Total Number of Dominant Species 3 Total Number of Dominant Species 3 Total Number of Dominant Species 1 Salix / a Siandra 2 Total Number of Dominant Species 3 Total Number of Dominant Species 1 Salix / a Siandra 2 Total Number of Dominant Species 3 Total Scover 4 Total Number of Dominant Species 5 Total Scover of: 4 Secolar Siandra 2 Carex unit later and scover 4 Secolar Siandra 5 Total Scover 1 Total Scover 2 Carex unit lateralis 3			ampling point l	ocations, transects	s, important features, etc
Wetland Hydrology Present? Yes X No Within a Wetlandr Yes A No Remarks: W ET land is immedicately abulting an unmapped STream for The majority of its extent, Stream wasflowing an Unmapped Stream for The majority of its extent, Stream wasflowing an Unmapped Stream Intermedication VEGETATION - Use scientific names of plants. Itermedication Absolute Dominant indicator Very Stratum (Plot size: % Cover Species? Status 1. Species Across All Strata: (B) 2. Species Across All Strata: (B) 3. Factor of Dominant Species (A) 1. Saplina/Shrub Stratum (Plot size: Ite Total Cover 1. Tau cuss e PAu sussistion So 2. Ite Total Cover Yes At a cuss is 50% 3. Carrex Ob nupla Io Yes Execond Non-Vascuar Plants' 3. Carrex Ob nupla Io Yes <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
Remarks: WETLand is immediately aballing an unmapped STream For The majority of its extent, Stream wasflowing at the time of the Survey VEGETATION - Use scientific names of plants. Tree stratum (Plot size:			within a Wetlan	nd? Yes X	No
Absolute Dominant Indicator Dominance Test worksheet: 1. Species? Status Number of Dominant Species 2. Total Number of Dominant Species (A) 3.	Remarks: M/aTland is immed	Toluo	butting a	the upmapon	STream
Absolute Dominant Indicator Dominance Test worksheet: 1. Species? Status Number of Dominant Species 2. Total Number of Dominant Species (A) 3.	F The major Tr of iTe	OVIDAT	. Stream	in a Elouiston	TheTimeof
Absolute Dominant Indicator Dominance Test worksheet: 1. Species? Status Number of Dominant Species 2. Total Number of Dominant Species (A) 3.	for the majority of this	Q x en i	r Sircein (DUST 1000 mg	The Survey
Iree Stratum (Plot size:	VEGETATION – Use scientific names of plai				
1.	Tree Stratum (Plot size:)				
3					
3.	2			Total Number of Domi	nant
Saping/Shub Stratum (Plot size:	3			Species Across All Str	ata: <u>6</u> (B)
Sapling/Shrub Stratum (Plot size:	4			Percent of Dominant S	
1 Salix lassiandra 60 9 FACW 2 Total % Cover of: Multiply by: 3	Sanling/Shruh Stratum (Plot size:		Total Cover	CONTRACTOR ENDING	OFFAC: (A/B)
2. Industrian 3. OBL species 4. Sector 5. FACW species 5. FAC species 1. Sector 1. Sector 1. Sector 2. Sector 1. Sector 2. Sector 3. Sector 3. Sector 3. Sector 4. Sector 5. Sector 1. Sector 2. Sector 3. Carex un; lateral is 10. Y 2. Sector 3. Sector 3. Sector 3. Sector 4. Sector 5. Sector 5. Sector 6. Y 7. Sector 8. Sector 9. Sector 9. Sector 10. Sector 11. Sector	1 Salix la siandra	60	4 FACW		
3.	2.				and the second
4.	3			the second se	
5.	4				
Herb Stratum (Plot size:	5			A SAME A CONTRACTOR AND A SAME AND A	
1. Juncus effusus 30 Y FACID Column Totals: (A) (B) 2. Carex ob nuplo io Y OBL Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 3. Carex unitations 10 Y FACID I - Rapid Test for Hydrophytic Vegetation 4. Give ria elata 10 Y FACID I - Rapid Test for Hydrophytic Vegetation 5. Impatients capensis 40 Y FACID X 2 - Dominance Test is >50% 6.	Horb Stratum (Plot size:		Total Cover		
2. Carex ob nupla io ý OBL Prevalence Index = B/A = 3. Carex unilatenatis io ý OBL Hydrophytic Vegetation Indicators: 4. Glyceria elata io ý FAW 5. Impatiens capensis 40 ý FAW 6		30	4 FACID	Column Totals:	(A) (B)
3. Carex unitateralis 10 Y OBA 4. Glyceria elata 10 Y FAW 5. TmpaTiens capensis 40 Y FAW 6.				Prevalence Inde	x = B/A =
4. Glyceria elata 10 9 FRW 5. TmpaTiens capensis 40 4 FRW	3. Garex unilateralis	10			
6.	4. Glyceria elata	10		1 - Rapid Test for	Hydrophytic Vegetation
7.	5. Impatiens capensis	40	Y PAG	X 2 - Dominance Te	est is >50%
8.	6			-	
8.	7			4 - Morphological	Adaptations ¹ (Provide supporting
9				and the second se	
10.					
11.				the second se	A second s
Woody Vine Stratum (Plot size:) Hydrophytic 1	11		Total Cover	be present, unless dis	turbed or problematic.
2	Woody Vine Stratum (Plot size:)	100-			
2 Present? Yes X No % Bare Ground in Herb Stratum	1	ويستعد			
% Bare Ground in Herb Stratum	2			Vegetation Present? Y	es X No
Remarks: Willow growth and Loverage has filled in Substantially Since 2014	% Bare Ground in Herb Stratum		Total Cover		
Sub stantially since 2017	Remarks:		6 Alas Ha	hac Filled	in
Sub stantially Since 2014	willow growth a	nd L	overage	has tirea	119
	Substantially	Since .	2017		

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

Type:		inpuon. (Describe	to the dep	th needed to docum				The absence c			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			04				Loc ²	Texture		Remarks	
B-16 DYR 4/1 90 IOYR 5/8 10 A SilTLaam Typer SilTLaam SilTLaam SilTLaam SilTLaam Typer SiltLaam SiltLaam SiltLaam SiltLaam Typer SiltLaam SiltLaam SiltLaam SiltLaam Histe Epideon (A2) Starged Matrix (S5) - Conductors: (Applicable to all LRs, unless otherwise noted.) Indicators of Problematic Hydric Soils': 2 cm Muck (A10) SiltLaam Conductors: (Applicable to all LRs, unless otherwise noted.) - Conductors: (Applicable to all LRs, unless otherwise noted.) - Conductors: (Applicable to all LRs, unless otherwise noted.) - Conductors: (Applicable to all LRs, unless otherwise noted.) - Conductors: (Point Intermatics) Hydrogo Startae (K12) Startae (K14) Learny Mucky Mineral (S1) Depleted Dark Surface (F1) - Conductors: (Point Intermatics) Sandy Mucky Mineral (S1) Depleted Dark Surface (F2) Hydroic Soil Present? Yes X No Settrictus Larger (If present): - Present Sitter Siter Sitter Siter Sitter Sitter Siter Sitter Sitter Site			-				m		am		
Type: Location: PL=Pore Lining, M=Matrix. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Costed Sand Grains. ³ Location: PL=Pore Lining, M=Matrix. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Costed Sand Grains. ³ Location: PL=Pore Lining, M=Matrix. Type: Sandy Redox (S5)	0										
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	Type: C=C	Indicators: (Applic	cable to all	LRRs. unless other	wise note	ed.)	d Gand Of				
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Hydrogen Sulfide (A4)) (excep	t MLRA 1)	Very	Shallow Da	rk Surface (TF	12)
Depleted Below Dark Surface (A11) Depleted Matrix (F3) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:								Othe	r (Explain in	Remarks)	
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				X Redox Dark Sur	face (F6)						
Saley Gryce Mark (cf)	Sandy M	Aucky Mineral (S1)		Depleted Dark S	Surface (F	7)					
Type:	Sandy (Gleyed Matrix (S4)		Redox Depress	ions (F8)	à		unless	disturbed	or problematic.	0
Depth (inches): Hydric Soil Present? Yes X No Remarks: Soil is Similar To The Soils characterized in The 2014 Survey YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) X Surface Water (A1) Water-Stained Leaves (B9) (except Water-Stained Leaves (B9) (MLRA 1 X High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) X Saturation (A3) Sati Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery I Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) In undation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparace Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Sparace Vegetated Concave Surface (B8) Depth (inches): If water Table Present? Field Observations: Yes X No Depth (inches): If water Table Present? Saturateo Present? Yes X	Restrictive	Layer (if present):									
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X Surface Water (A1)	Depth (in Remarks:	boil is s 2014 DGY	Sur		ne S	sils	ch				
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Surface Soil Cracks (B6)	Depth (in Remarks: IYDROLC Wetland Hy Primary Indi X Surface X High W X Saturat Water M Saturat Sedime Drift De	OCIL IS S 2014 OGY Indrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3)	Sur	ed; check all that appl — Water-Stai MLRA — Salt Crust — Aquatic Im — Hydrogen — Oxidized F	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe	es (B9) (d and 4B) s (B13) dor (C1) res along	except	aracTer <u>Secon</u> W Di Si ots (C3)G	dary Indical ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I	in 76 tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2)	و <u>required)</u> (MLRA 1, 2
	Depth (in Remarks: IYDROLO Wetland Hy Primary Indi X Surface X High W Saturat Water M Sedime Drift De Algal M	OCIL IS S 2014 Corology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4)	Sur	ed; check all that appl — Water-Stai MLRA — Salt Crust — Aquatic Im — Hydrogen — Oxidized F — Presence	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe of Reduce	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C	except I Living Ro	aracTer <u>Secon</u> W W D Si Si Si Si	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I nallow Aquit	in 76 tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3)	و <u>required)</u> (MLRA 1, 2
Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes X No Depth (inches):' Water Table Present? Yes X No Depth (inches):' Saturation Present? Yes X No Depth (inches):' (includes capillary fringe) Wetland Hydrology Present? Yes X No	Depth (in Remarks: IYDROLO Wetland Hy Primary Indi X Surface X High W X Saturat Water M Sedime Drift De Algal M Iron De	OCIL IS S 2014 Corology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	Sur	ed; check all that appl — Water-Stai MLRA — Salt Crust — Aquatic Int — Hydrogen — Oxidized F — Presence — Recent Iro	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe of Reduce on Reducti	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille	except Living Ro (4) ed Soils (C	aracter <u>Secon</u> W W D Si ots (C3) Si 6)F	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I nallow Aquit AC-Neutral	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5)	e required) (MLRA 1, 2 2) Imagery (C
Field Observations: Surface Water Present? Yes X No Depth (inches): O" Water Table Present? Yes X No Depth (inches): O" Saturation Present? Yes X No Depth (inches): O" (includes capillary fringe) Yes X No Depth (inches): O"	Depth (in Remarks: 2 Wetland Hy Primary Indi X Surface X High W X Saturat Water M Sedime Drift De Algal M Iron De Surface	Doil is S 2014 Corology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) s Soil Cracks (B6)	Sur	ed; check all that appl Water-Stat MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe of Reduce on Reducti r Stressed	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I	except Living Ro (4) ed Soils (C	aracTer <u>Secon</u> <u>W</u> <u>Di</u> <u>Si</u> ots (C3) <u>Si</u> 6) <u>Si</u> A B B C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) tounds (D6) (L	e <u>required)</u> (MLRA 1, 2 2) Imagery (C RR A)
Surface Water Present? Yes X No Depth (inches):?" Water Table Present? Yes X No Depth (inches):?" Saturation Present? Yes X No Depth (inches):?" Water Table Present? Yes X No Depth (inches):?" Saturation Present? Yes X No Depth (inches):?" Wetland Hydrology Present? Yes X No	Depth (in Remarks: 2 Wetland Hy Primary Indi X Surface X High W X Saturat Water M Sedime Drift De Algal M Iron De Surface Inundat	Doil is S 2014 Corology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) soil Cracks (B6) ion Visible on Aerial	S cc v : one require	ed; check all that appl Water-Stat MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe of Reduce on Reducti r Stressed	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I	except Living Ro (4) ed Soils (C	aracTer <u>Secon</u> <u>W</u> <u>Di</u> <u>Si</u> ots (C3) <u>Si</u> 6) <u>Si</u> A B B C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) tounds (D6) (L	e <u>required)</u> (MLRA 1, 2 2) Imagery (C
Water Table Present? Yes X No Depth (inches): O" Wetland Hydrology Present? Yes X No Saturation Present? Yes X No Depth (inches): O" Wetland Hydrology Present? Yes X No (includes capillary fringe) Wetland Hydrology Present? Yes X No	Depth (in Remarks: IYDROLC Wetland Hy Primary Indi X Surface X High W X Saturat Water N Sedime Drift De Algal M Iron De Surface Inundal Sparse	OCIL IS S 2014 OGY drology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) s Soil Cracks (B6) ion Visible on Aerial by Vegetated Concar	S cc v : one require	ed; check all that appl Water-Stat MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe of Reduce on Reducti r Stressed	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR A	aracTer <u>Secon</u> <u>W</u> <u>Di</u> <u>Si</u> ots (C3) <u>Si</u> 6) <u>Si</u> A B B C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) tounds (D6) (L	e required) (MLRA 1, 2 2) Imagery (CS
Saturation Present? Yes X No Depth (inches): Wetland Hydrology Present? Yes X No (includes capillary fringe)	Depth (in Remarks: IYDROLC Wetland Hy Primary Indi X Surface X High W X Saturat Water M Saturat Unift De Algal M Iron De Surface Sparse Field Obse	OCIL IS S 2014 OGY drology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) s Soil Cracks (B6) ion Visible on Aerial by Vegetated Concar rvations:	S cur : one require ulmagery (E ve Surface	ed; check all that appl Water-Stai MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or 37) Other (Exp (B8)	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti r Stressed plain in Re	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR A	aracTer <u>Secon</u> <u>W</u> <u>Di</u> <u>Si</u> ots (C3) <u>Si</u> 6) <u>Si</u> A B B C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) tounds (D6) (L	e required) (MLRA 1, 2 2) Imagery (CS
(includes capillary fringe)	Depth (in Remarks: IYDROLO Wetland Hy Primary Indi X Surface X High W Saturat Water M Sedime Drift De Algal M Iron De Surface Sparse Field Obse Surface Wa	OCIL IS S 2014 Corology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial by Vegetated Concar rvations: ter Present?	S CL Y : one require ve Surface Yes X	ed; check all that appl — Water-Stai MLRA — Salt Crust — Aquatic Im — Hydrogen — Oxidized F — Presence — Recent Iro — Stunted or 37) — Other (Exp (B8)	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe of Reduce on Reducti r Stressed plain in Re	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR A	aracTer <u>Secon</u> <u>W</u> <u>Di</u> <u>Si</u> ots (C3) <u>Si</u> 6) <u>Si</u> A B B C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) tounds (D6) (L	e <u>required)</u> (MLRA 1, 2 2) Imagery (C
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Depth (in Remarks: 2 IYDROLO Wetland Hy Primary Indi X Surface X High W X Saturat Water M Sedime Drift De Algal M Iron De Surface Surface Surface Wa Water Table	Doil is S 2014 Corology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial by Vegetated Concar rvations: ter Present? e Present?	Sur : one require ve Surface Yes X Yes X	ed; check all that appl water-Stat MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Stunted or Other (Exp (B8)	y) ined Leave (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti r Stressed plain in Re ches): ches):	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR A	aracter <u>Secon</u> W W Du Su ots (C3)Su 6)Fu WFu	dary Indical dater-Stained 4A, and 44 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M rost-Heave	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) lounds (D6) (L Hummocks (D	e required) (MLRA 1, 2 2) Imagery (CS RR A) 7)
	Depth (in Remarks: 2 IYDROLC Wetland Hy Primary Indi X Surface X High W X Saturat Water M Bedime Drift De Algal M Iron De Surface Surface Surface Wa Water Table Saturation F (includes ca	OCIL IS S 2014 Control	S CL V : one require ve Surface Yes X Yes X Yes X	A G C Y Adj: check all that apple Adj: check all that apple Adj: check all that apple Water-Stai MLRA Adjuatic Im Adjuati	y) ined Leave (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti stressed plain in Re ches): ches):	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I emarks)	except Living Ro (4) ed Soils (C D1) (LRR A (avacTer	dary Indical dater-Stained 4A, and 44 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M rost-Heave	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) lounds (D6) (L Hummocks (D	e required) (MLRA 1, 2 2) Imagery (CS RR A) 7)
Demarke:	Depth (in Remarks: 2 IYDROLC Wetland Hy Primary Indi X Surface X High W X Saturat Water M Bedime Drift De Algal M Iron De Surface Surface Surface Wa Water Table Saturation F (includes ca	OCIL IS S 2014 Control	S CL V : one require ve Surface Yes X Yes X Yes X	A G C Y Adj: check all that apple Adj: check all that apple Adj: check all that apple Water-Stai MLRA Adjuatic Im Adjuati	y) ined Leave (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti stressed plain in Re ches): ches):	es (B9) (d and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I emarks)	except Living Ro (4) ed Soils (C D1) (LRR A (avacTer	dary Indical dater-Stained 4A, and 44 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M rost-Heave	tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) lounds (D6) (L Hummocks (D	e required) (MLRA 1, 2 2) Imagery (C RR A) 7)
Remarks: Creek is Flowing in Late July and margins Were saturated	Depth (in Remarks: 2 IYDROLC Wetland Hy Primary Indi X Surface X High W X Saturat Water M Bedime Drift De Algal M Iron De Surface Surface Surface Wa Water Table Saturation F (includes ca	Doil is S 2014 Corology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial by Vegetated Concar rvations: ter Present? e Present? Present? positinge) ecorded Data (streau	Surv : one require one require ve Surface Yes X Yes X Yes X	ed; check all that appl water-Stai MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or 37) Other (Exg (B8) No Depth (in No Depth (in No Depth (in No Depth (in	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti r Stressed plain in Re ches): ches): ches): photos, pr	es (B9) ((and 4B) s (B13) dor (C1) res along ed Iron (C on in Tille Plants (I emarks)	except Living Ro 4) ed Soils (C D1) (LRR A (avacTer Secon	dary Indicat ater-Stained 4A, and 4 rainage Patt ry-Season V aturation Vis eomorphic I hallow Aquit AC-Neutral aised Ant M rost-Heave	in 76 tors (2 or more d Leaves (B9) B) terns (B10) Vater Table (C sible on Aerial Position (D2) tard (D3) Test (D5) tounds (D6) (L Hummocks (D Yes X	e required) (MLRA 1, 2 2) Imagery (C RR A) 7)

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

Project/Site: Condit		City/County	Kin	CKITAT Sampling Date: 7/20/16
Applicant/Owner: PacifiCorp		City/County		State: W/A Sampling Point: W-y - up
Investigator(s): B. Horton, S. Eanu	0.0	Contine To	washin Do	
Landform (hillslope, terrace, etc.): Hillslope				
Subregion (LRR):				Long: -121 . 536208 Datum: NAD 83
Soil Map Unit Name: <u>Un mapped - reserve</u>				
Are climatic / hydrologic conditions on the site typical for thi	and the second			
Are Vegetation N , Soil Y , or Hydrology N s	significantly	disturbed?	Are "	Normal Circumstances" present? Yes X No
Are Vegetation N , Soil N , or Hydrology N r	naturally pro	blematic?	(If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point le	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes N	o_X_	- 100		
Hydric Soil Present? Yes N			e Sampled	
Wetland Hydrology Present? Yes N			in a Wetlar	
Remarks: PloTexcavated u	psiop	e o	f we	Thand ploton slope
graded adjac				
0 0		10	ine	unnamea
VEGETATION – Use scientific names of plan	ts.		1000	
Tree Stratum (Plot size:)	Absolute % Cover		Indicator	Dominance Test worksheet:
1	10 00001	Opecies:	Olalus	Number of Dominant Species That Are OBL, FACW, or FAC:(A)
2.			1	
3.				Total Number of Dominant Species Across All Strata:(B)
4.				(/
		= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40%</u> (A/B)
Sapling/Shrub Stratum (Plot size:)	20		FACU	Prevalence Index worksheet:
1. Acer macrophyllum				Total % Cover of: Multiply by:
2. <u>PSeudoTsuga melnzeseii</u>	20	-4-	FACU	OBL species x 1 =
3		· <u> </u>		FACW species 20 x 2 = 40
5				FAC species $40 \times 3 = 120$
		= Total Co	ver	FACU species $60 \times 4 = 240$
Herb Stratum (Plot size:)	10.000			UPL species x 5 =
1. Elymus Trachycaulus	25	_Y_	FAC	Column Totals: 120 (A) 400 (B)
2. Achillea mille folium	20	_4_	FACU	Prevalence Index = $B/A = 3 + 3$
	20	-4-	FACU	Hydrophytic Vegetation Indicators:
4. Februca rubra rubra	15	_0_	FAL	1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 ¹
7				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
89				5 - Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must
		= Total Co	ver	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)				
1			<u> </u>	Hydrophytic
2				Vegetation Present? Yes <u>No X</u>
% Bare Ground in Herb Stratum		= Total Co	ver	
Remarks:				

c	0	t	t.
9	v	I	-

Sampling Point: Wy-upt

Profile Description: (Describe to the de Depth Matrix	epth needed to document the indicator or confir Redox Features	m the absence of indicators.)
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-16_10 YR 3/3 100		SillLoam
¹ Type: C=Concentration, D=Depletion, RI Hydric Soil Indicators: (Applicable to a Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	M=Reduced Matrix, CS=Covered or Coated Sand (III LRRs, unless otherwise noted.) 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)	Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2)
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present): Type: Depth (inches):		Hydric Soil Present? Yes No 人
HYDROLOGY Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required)	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 Re Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR (B7) Other (Explain in Remarks)	C6) FAC-Neutral Test (D5)
Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Yes	No <u>¥</u> Depth (inches): No <u>¥</u> Depth (inches): No <u>¥</u> Depth (inches): We monitoring well, aerial photos, previous inspections	ntland Hydrology Present? Yes No X
Remarks: Soil is dry	and crumbhy	

WETLAND DETERMINATION DATA FOR	M – Western Mounta	ains, Valleys, and	Coast Region
Project/Site: Condit	City/County: Skan	nania	Sampling Date: 7/19/16
Applicant/Owner: PacifiCorp		_ State: WA_	Sampling Point: <u>Bw-1</u>
Investigator(s): S. Carcana, B. Horton	Section, Township, Range	<u>S3T3N</u>	BIOE
Landform (hillslope, terrace, etc.); Hillslope	Local relief (concave, con	ivex, none): CONC	ave slope (%): 5
Subregion (LRR): Lat:	5.770403 L	ong: 721.537	792 Datum: NAD83
Soil Map Unit Name: Un mapped - reservoir	sediments.	NWI classifica	ition: PSS
Are climatic / hydrologic conditions on the site typical for this time of ye		(If no, explain in Re	
Are Vegetation, Soil X, or Hydrology significantly	disturbed? Are "No	rmal Circumstances" pr	esent? Yes <u>X</u> No
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If need	ed, explain any answer	s in Remarks.)

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Remarks:			

VEGETATION - Use scientific names of plants.

	Absolute		Indicator	Dominance Test worksh	eet:	
Tree Stratum (Plot size:)	% Cover	100 C 100	Sector Sector	Number of Dominant Spec		(A)
1				That Are OBL, FACW, or I	-AC:	(A)
2				Total Number of Dominant	1 0	-
3				Species Across All Strata:	2	(B)
4				Percent of Dominant Spec		
Carling (Chruh Stratum (Distaire)		= Total Co	over	That Are OBL, FACW, or I	FAC: 100	(A/B)
<u>Sapling/Shrub Stratum</u> (Plot size:) 1. Salix Lasiandra	80	V	FACW	Prevalence Index works	heet:	
		-1-	FAC	Total % Cover of:	Multiply by	<u>. </u>
2. Populas balsamifera	_ 20	-	<u>FIA</u>	OBL species	x 1 =	
3				FACW species	x 2 =	
4				FAC species		
5		-		FACU species		
	100	= Total Co	over	UPL species		
<u>Herb Stratum</u> (Plot size:) 1. Juncus effusus	90	4	FACLO	Column Totals:		
2		_		Prevalence Index =	B/A =	
3.				Hydrophytic Vegetation		
4				1 - Rapid Test for Hyd		n
5				X 2 - Dominance Test is		
6				3 - Prevalence Index		
7				4 - Morphological Ada		supporting
8				data in Remarks o	or on a separate she	eet)
9		-		5 - Wetland Non-Vaso	cular Plants ¹	
				Problematic Hydrophy	ytic Vegetation ¹ (E)	(plain)
10				¹ Indicators of hydric soil a		
11	90	= Total Co		be present, unless disturb		
Woody Vine Stratum (Plot size:)		_= Total Co	iver			
1				Hydrophytic		
2					V	
£		= Total Co	ver	Present? Yes	X No	40 mil
% Bare Ground in Herb Stratum	-	_= Total Oc				
Remarks:						

SOIL

Sampling Point: <u>B</u>W-1

Profile Description: (Describe to the dep	th needed to document the indicator or co	onfirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %		A <u>Exit</u> Remarks
0-6 2.5 YR4A 90%	7.54B6/8 10 C N	Silly Layloan
	the second s	
	Anno and a second s	
	=Reduced Matrix, CS=Covered or Coated Sa	
Hydric Soil Indicators: (Applicable to all	LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLI	
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	<u>X</u> Depleted Matrix (F3) Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:	and see the second s	-
Depth (inches):		Hydric Soil Present? Yes X No
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one require		Secondary Indicators (2 or more required)
X Surface Water (A1)	Water-Stained Leaves (B9) (except	이 그는 것 같은 것 같
High Water Table (A2)	MLRA 1, 2, 4A, and 4B)	4A, and 4B)
X Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	X Oxidized Rhizospheres along Livin	전 2017년 1월 2
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Tilled So	
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (L	.RR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface)		
Field Observations:		
	No Depth (inches):	
	No <u>X</u> Depth (inches):	
	2	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>Y</u> (includes capillary fringe)	No Depth (inches):	
	onitoring well, aerial photos, previous inspect	tions), if available:
Remarks: Seeping Flow	wing water@Sur	face

	WETLAND D	ETERMINATION	N DATA FORM – Wes	tern Mountains, Val	leys, and Coa	st Region	
Project/Site:	Cond	liT.	City/Count	Skamani	a Samp	ling Date: 7/19	116
Applicant/Owne	r. Pacif	iCorp		State:	WH Sampl	ling Point: Bu-1.	upl
Investigator(s):-	S.Caru	iana B.	Horton Section, T	ownship, Range: <u>S3</u> -	13N- BI	DE	
Landform (hills)	ope, terrace, etc.):	Hill3101	De Local relie	f (concave, convex, none)	Convex	Slope (%):	10%
Subregion (LRF	R): <u>A</u>	1		10353 Long: -12		A Datum: N/14	182
Soil Map Unit N	lame: <u>21nm</u>	apped B	eser voir S	adiments N	IWI classification: _		
Are climatic / hy	drologic condition	s on the site typical	for this time of year? Yes _	X No (If no, i	explain in Remarks	5.)	
Are Vegetation	, Soil <u>X</u>	, or Hydrology	significantly disturbed?	Are "Normal Circuit	mstances" present	? Yes X No.	<u> </u>
Are Vegetation	, Soil	, or Hydrology	naturally problematic?	(If needed, explain	any answers in Re	emarks.)	
SUMMARY	OF FINDINGS	- Attach site	map showing sampli	ng point locations, t	ransects, imp	ortant features,	etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> Yes Yes	No No No	Is the Sampled Area within a Wetland?	Yes	No.X
Remarks:					

VEGETATION – Use scientific names of plants.

	Absolute		Indicator	Dominance Test worksne	et:	
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Speci		
1				That Are OBL, FACW, or FA	AC:	_ (A)
2				Total Number of Dominant Species Across All Strata:	2	(B)
4.		1000				/
		= Total Co	over	Percent of Dominant Specie That Are OBL, FACW, or F		_ (A/B)
Sapling/Shrub Stratum (Plot size:)	20		FACLU	Prevalence Index worksh	eet:	1.
1. Populus balsamifera				Total % Cover of:	Multiply by:	100
2				OBL species	x 1 =	_
3				FACW species	x 2 =	
4				FAC species	x 3 =	
5				FACU species		
Used Strature (Distained	-	= Total Co	over	UPL species		
Herb Stratum (Plot size:) 1. Silene Uulgaris	15		ind	Column Totals:		
2. Poa spp d	- 30	9	FA	Prevalence Index = E		
3.				Hydrophytic Vegetation In		_
4				1 - Rapid Test for Hydr		
5				X 2 - Dominance Test is		
6				3 - Prevalence Index is		
7				4 - Morphological Adap		upporting
8				data in Remarks or	on a separate sheet	et)
9				5 - Wetland Non-Vasci	ular Plants ¹	
10				Problematic Hydrophyl	tic Vegetation ¹ (Exp	olain)
11				¹ Indicators of hydric soil an	d wetland hydrolog	y must
	- 45	= Total Co	ver	be present, unless disturbe	d or problematic.	
Woody Vine Stratum (Plot size:)		_ 10101 00				
1	_			Hydrophytic		
2				Vegetation	X No	
	1	= Total Co	ver	Present? Yes	NO	
% Bare Ground in Herb Stratum						
Remarks:						

SOIL

Depth Matrix		Redo	x Features		
(inches) Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture Remarks
0-2 104R 5/2	100			(Sillychay Loam
	<u> </u>				
				3 - T (1	
				7 	
Type: C=Concentration, D=Deple				ted Sand Grain	
lydric Soil Indicators: (Applica	ble to all LR				Indicators for Problematic Hydric Soils ³ :
_ Histosol (A1)	-	_ Sandy Redox (2 cm Muck (A10)
_ Histic Epipedon (A2)		_ Stripped Matrix			Red Parent Material (TF2)
Black Histic (A3)			Mineral (F1) (exce	pt WLRA 1)	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
 Hydrogen Sulfide (A4) Depleted Below Dark Surface 	(A11)	Loamy Gleyed Depleted Matrix			
Thick Dark Surface (A12)	(411) _	Redox Dark Su			³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark			wetland hydrology must be present,
_ Sandy Gleyed Matrix (S4)		Redox Depress			unless disturbed or problematic.
estrictive Layer (if present):					
Type: Bedrock					
Depth (inches): 2		2			Hydric Soil Present? Yes No X
Remarks:		-			
Sec. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.					
Cert W/ NY P As a second state of the					
Cert W/ NY P As a second state of the	Juan I				
Vetland Hydrology Indicators:	e required; c	check all that appl	y)		Secondary Indicators (2 or more required)
Vetland Hydrology Indicators:	e required; c	and the second	y) ined Leaves (B9)	(except	<u>Secondary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2,
Vetland Hydrology Indicators: rimary Indicators (minimum of on	e required; c	Water-Sta	and the second sec		
Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1)	e required; c	Water-Sta	ined Leaves (B9) 1, 2, 4A, and 4B)		Water-Stained Leaves (B9) (MLRA 1, 2,
Vetland Hydrology Indicators: <u>rimary Indicators (minimum of on</u> Surface Water (A1) High Water Table (A2)	e required; c	Water-Sta MLRA Salt Crust	ined Leaves (B9) 1, 2, 4A, and 4B)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Vetland Hydrology Indicators: Irimary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3)	e required; c	Water-Sta MLRA Salt Crust	ined Leaves (B9) 1, 2, 4A, and 4B) (B11)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Vetland Hydrology Indicators: <u>trimary Indicators (minimum of on</u> Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	e required; c	Water-Sta MLRA Salt Crust Aquatic Int Hydrogen	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13)		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Vetland Hydrology Indicators: <u>trimary Indicators (minimum of on</u> Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	e required; c	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1)	g Living Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
Vetland Hydrology Indicators: Irimary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	e required; c	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon	g Living Roots C4)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 (C3) Geomorphic Position (D2)
Vetland Hydrology Indicators: rimary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	e required; c	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (6	g Living Roots C4) led Soils (C6)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indicators: rimary Indicators (minimum of on 		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (on Reduction in Til	g Living Roots C4) led Soils (C6)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: rimary Indicators (minimum of on 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)	nagery (B7)	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (on Reduction in Till r Stressed Plants (g Living Roots C4) led Soils (C6)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: rimary Indicators (minimum of on 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 Im Sparsely Vegetated Concave	nagery (B7)	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (on Reduction in Till r Stressed Plants (g Living Roots C4) led Soils (C6)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: rimary Indicators (minimum of on 	nagery (B7)	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (on Reduction in Til r Stressed Plants (plain in Remarks)	g Living Roots C4) led Soils (C6)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of on 	nagery (B7) Surface (B8) s No	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (on Reduction in Til r Stressed Plants (plain in Remarks) ches):	g Living Roots C4) led Soils (C6) D1) (LRR A)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of on	nagery (B7) Surface (B8) s No s No	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (for on Reduction in Till r Stressed Plants (plain in Remarks) ches): ches):	g Living Roots C4) led Soils (C6) D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Primary Indicators (minimum of on	nagery (B7) Surface (B8) s No s No	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (on Reduction in Til r Stressed Plants (plain in Remarks) ches):	g Living Roots C4) led Soils (C6) D1) (LRR A)	 Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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 Im Sparsely Vegetated Concave Field Observations: Surface Water Present? Ye Nater Table Present? Ye	nagery (B7) Surface (B8) s No s No s No	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Other (Exp Depth (in X Depth (in	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (for n Reduction in Till r Stressed Plants (oblain in Remarks) ches): ches):	g Living Roots C4) led Soils (C6) D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Primary Indicators (minimum of on	nagery (B7) Surface (B8) s No s No s No	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Other (Exp Depth (in X Depth (in	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (for n Reduction in Till r Stressed Plants (oblain in Remarks) ches): ches):	g Living Roots C4) led Soils (C6) D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Primary Indicators (minimum of on 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 Im Sparsely Vegetated Concave Field Observations: Surface Water Present? Ye Vater Table Present? Ye Saturation Present?	nagery (B7) Surface (B8) s No s No s No gauge, monit	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in X Depth (in X Depth (in X Depth (in	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (for n Reduction in Till r Stressed Plants (oblain in Remarks) ches): ches): photos, previous in	g Living Roots C4) led Soils (C6) D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Trimary Indicators (minimum of on 	nagery (B7) Surface (B8) s No s No s No gauge, monit	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in X Depth (in X Depth (in X Depth (in	ined Leaves (B9) 1, 2, 4A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (for n Reduction in Till r Stressed Plants (oblain in Remarks) ches): ches): photos, previous in	g Living Roots C4) led Soils (C6) D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C3) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

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

Project/Site: Condit	City/County: Skamania Sampling Date: 7/19/16
Applicant/Owner: Pacifi Corp	State: WA Sampling Point: BW-2
Investigator(s): S. Carvana, B. Horton	Section, Township, Range: S3- T3N - RIDE
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>40</u>
Subregion (LRR): A Lat: 4	5-768733 Long: 7/21. Datum: NAD 83
Soil Map Unit Name: Unmapped - Reservoir	sediments NWI classification: TEM
Are climatic / hydrologic conditions on the site typical for this time of y	
Are Vegetation, Soil X, or Hydrology significantl	
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> No Yes <u>X</u> No Yes <u>X</u> No	Is the Sampled Area within a Wetland?	Yes X No
Remarks:			

VEGETATION – Use scientific names of plants.

	Absolute		Indicator	Dominance Test worksne	et:	
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Speci		
1				That Are OBL, FACW, or FA	AC:	_ (A)
2	<u> </u>			Total Number of Dominant		
3			·	Species Across All Strata:	_2	(B)
4	_			Percent of Dominant Specie	AS .	
		= Total Co	over	That Are OBL, FACW, or F.		(A/B)
Sapling/Shrub Stratum (Plot size:)	20	U	EM.	Prevalence Index worksh	eet:	
1. Populus balsamiFera				Total % Cover of:	Multiply by:	1.1.1
2				OBL species		
3	_			FACW species		
4				FAC species		
5				FACU species		
	20	= Total Co	over			
Herb Stratum (Plot size:)	00	()	N.4	UPL species		
1. Juncus effusus		7_	FACW	Column Totals:	_ (A)	(B)
2. Phalaris arundinacae	20			Prevalence Index = E	B/A =	_
3				Hydrophytic Vegetation I	ndicators:	
4	1000			1 - Rapid Test for Hydr	rophytic Vegetation	1
5	_			2 - Dominance Test is	>50%	
6				3 - Prevalence Index is	s ≤3.0 ¹	
7				4 - Morphological Ada	ptations ¹ (Provide s	supporting
8				data in Remarks or	on a separate she	et)
9				5 - Wetland Non-Vasc	ular Plants ¹	
10				Problematic Hydrophy	tic Vegetation ¹ (Ex	plain)
11				¹ Indicators of hydric soil an		gy must
		= Total Co	ver	be present, unless disturbe	d or problematic.	
Woody Vine Stratum (Plot size:)						
1.	-			Hydrophytic		
2				Venetation	1	
		= Total Co		Present? Yes	XNo	÷
% Bare Ground in Herb Stratum		-				
Remarks:				a		

SOIL

. .

Sampling Point: BW-2

Depth .		Matrix			Redo				A States			2.3.5.20	
nches)	Color (%	Color	(moist)	%	Type'	Loc ²	Texture	-	1	Remarks	_
1-6	104R	32	710	_	1.				SITLO	iam			
8	IOYR	3/2	98	164R	618	2	C	m	SITT	cam			
	1000				1.1.1								
				-			-						
			·			· · · · ·		· <u> </u>					
												_	
				-				1.1	1	1			
ype: C=Cor	nantratio	D-Don	lation PM	-Reduced	Matrix C	S=Covoro	d or Coat	ad Sand Gr	aine ² I c	cation: E	DI =Por	e Lining, M	=Matrix
dric Soil In								eu Ganu Gra				natic Hydri	
Histosol ((Applie			ly Redox (m Muck (
Histic Epi		2)			ped Matrix					d Parent		al (TF2)	
Black His		-/					1) (excep	t MLRA 1)				Surface (T	=12)
Hydrogen		A4)			ny Gleyed	10 C C C C C C C C C C C C C C C C C C C				ner (Expla			
Depleted	10 m 10 m 10 m 10 m 10 m		e (A11)		eted Matrix								
_ Thick Dar	rk Surface	(A12)		Redo	ox Dark Su	rface (F6)						tic vegetatio	
_ Sandy Mu	ucky Mine	ral (S1)			eted Dark		7)					nust be pres	
_ Sandy Gl				Redo	ox Depress	sions (F8)	11		unle	ss disturb	bed or p	problematic	
estrictive La	ayer (if pi	resent):											
Type:									Sugar Sec.			×	
Type.									Hydric Soi	I Present	t? Y	es X	No
Depth (inclearned)	hes):	are	res	eruo	in so	edin	nenT	3					
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Depth (incl emarks: Sc DROLOG etland Hydr Surface V High Wate Saturation Water Ma Sediment Drift Dept	hes): SY Frology In ators (mining) Water (A1) ter Table (n (A3) arks (B1) t Deposits osits (B3)	dicators: imum of o A2) (B2)		ed; check a 	II that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F	y) ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide O Rhizosphe	es (B9) (4 and 4B) es (B13) dor (C1) rres along	except	<u>Secc</u> ts (C3)	ondary Inc Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorp	dicators ained L ad 4B) Patterr on Wat n Visibl hic Pos	s (2 or more eaves (B9) hs (B10) ter Table (C e on Aerial sition (D2)	<u>e required)</u> (MLRA 1, 2,
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WETLAND DETERMINATION DATA F	ORM – Western Moun	tains, Valleys, and	d Coast Region	
Project/Site: Condit	city/County: SKar	mania	Sampling Date: 2	119/16
Applicant/Owner: PacifiCorp		State: WA	Sampling Point:	1-2:4A
Investigator(s): S. Cardana, B. Horton	Section, Township, Rang	e: 53-T3N	RIDE	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, co	onvex, none): Conu	er Slope	(%): 35%
Subregion (LRR): Lat	45-768326	Long: -121.53	7974 Datum:	NAD83
Soil Map Unit Name: Unmapped -reservo	in sediments	NWI classific	ation:	
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology signific	antly disturbed? Are "N	ormal Circumstances" p	oresent? Yes	_ No
Are Vegetation, Soil, or Hydrology natural	ly problematic? (If nee	ded, explain any answe	rs in Remarks.)	
	denter de la service			1.000

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

VEGETATION – Use scientific names of plants.

18.

and asks of states and the states of the	Absolute		Indicator	Dominance Test workshe	et:	1000
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Spec	ies 7	6 C. 2 C
1				That Are OBL, FACW, or F	AC:	(A)
2	<u></u>			Total Number of Dominant	2	
3		_		Species Across All Strata:		(B)
4				Demont of Deminant Coop	in las	
		= Total Co	ver	Percent of Dominant Spec That Are OBL, FACW, or F		(A/B)
Sapling/Shrub Stratum (Plot size:)	10	4	En	Prevalence Index worksh		_ , ,
1. Populus balsamifera		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FAW	Total % Cover of:	Multiply by	c
2				OBL species	x 1 =	
3				FACW species		
4				FAC species		
5				FACU species		
Und Olasting (Distained)		= Total Co	ver	UPL species		
Herb Stratum (Plot size:) 1. Phahari's arundinacea	1-	V	FRees	Column Totals:		
			FACW		_ (^)	(b)
2. Holcas Lanatus		_		Prevalence Index =	B/A =	
3				Hydrophytic Vegetation I	ndicators:	
4				1 - Rapid Test for Hyd	rophytic Vegetatio	n
5				X 2 - Dominance Test is	>50%	
6				3 - Prevalence Index is	s ≤3.0 ¹	
7				4 - Morphological Ada		supporting
8				data in Remarks or		
9				5 - Wetland Non-Vasc	ular Plants ¹	
10				Problematic Hydrophy	tic Vegetation ¹ (E)	(plain)
11			0.000	¹ Indicators of hydric soil an	d wetland hydrolo	gy must
		= Total Cov	lor.	be present, unless disturbe	d or problematic.	
Woody Vine Stratum (Plot size:)		- Total Con				
1				Hydrophytic		
2				Vegetation	6	
		= Total Cov	/er	Present? Yes	<u>Å</u> No	-
% Bare Ground in Herb Stratum						
Remarks:						

SOIL

44 (0. <u>16</u>)

Sampling Point: Rul-2: up

rofile Description: (Descri	be to the de	epth needed								
Depth Matrix				Features	Type ¹	Loc ²	Texture		Remai	ke
Color (moist)	2 100	Color (n	noist)		Туре	LOC	Texture		Rema	N9
2-8 104R 4/2	2 100									
	L. C.									
		-								
		-					-			
		-							120.20	Annes
ype: C=Concentration, D=D	Depletion, R	M=Reduced M	Matrix, CS	=Covered	d or Coate	d Sand Gr	ains.	² Location: PL		ig, M=Matrix. Iydric Soils ³ :
vdric Soil Indicators: (App	olicable to a				ea.)					iyunc sons .
_ Histosol (A1)			Redox (S ed Matrix (2 cm Muck (A Red Parent M		2)
 Histic Epipedon (A2) Black Histic (A3)) (excent	MLRA 1)		Very Shallow		
_ Hydrogen Sulfide (A4)			Gleyed N					Other (Explain		
_ Depleted Below Dark Sur	face (A11)		ed Matrix					1	a now served of	
Thick Dark Surface (A12)			Dark Sur					icators of hydr		
Sandy Mucky Mineral (S1			ed Dark S		7)			vetland hydrol		
_ Sandy Gleyed Matrix (S4)		Redox	Depressi	ons (F8)				inless disturbe	d or proble	matic.
estrictive Layer (if present										
Type: Bedrock	0						100.000			
Death /inches)	8						Hydric	Soil Present	Yes	NoX
emarks: /DROLOGY	ors:									
emarks: /DROLOGY /etland Hydrology Indicato		ired; check all	that apply	0			\$			more required)
emarks: /DROLOGY /etland Hydrology Indicato			that apply Vater-Stai		es (B9) (e	xcept	<u>s</u>	_ Water-Stai	ned Leaves	more required) (B9) (MLRA 1, 2
emarks: 'DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum)		_ v	Vater-Stai	ned Leav I, 2, 4A, a		except	5	_ Water-Stai 4A, and	ned Leaves I 4B)	(B9) (MLRA 1, 2
Permarks: DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum _ Surface Water (A1)		v s	Vater-Stai MLRA 1 Salt Crust	ned Leav 1, 2, 4A, a (B11)	and 4B)	except	5	Water-Stai 4A, and Drainage F	ned Leaves I 4B) Patterns (B1	(B9) (MLRA 1, 2 0)
Permarks: DROLOGY Tetland Hydrology Indicator <u>imary Indicators (minimum i</u> _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1)		v s A	Vater-Stain MLRA 1 Salt Crust (Aquatic Inv	ned Leav I, 2, 4A, a (B11) rertebrate	and 4B) es (B13)	except	§	Water-Stai 4A, and Drainage F Dry-Seaso	ned Leaves I 4B) Patterns (B1 n Water Tal	(B9) (MLRA 1, 2 0) ble (C2)
Permarks: DROLOGY Tetland Hydrology Indicator <u>rimary Indicators (minimum re- _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2)</u>		V s +	Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen S	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O	and 4B) es (B13) dor (C1)		-	Water-Stai 4A, and Drainage F Dry-Seaso Saturation	ned Leaves I 4B) Patterns (B1 n Water Tal Visible on A	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (CS
Permarks: DROLOGY Vetland Hydrology Indicator <u>rimary Indicators (minimum of</u> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u>		V S A F	Vater-Stai MLRA Salt Crust Aquatic Inv Hydrogen S Oxidized R	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe	and 4B) es (B13) dor (C1) eres along	Living Roc	-	Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph	ned Leaves 1 4B) Patterns (B1 n Water Tal Visible on A ic Position ((B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (CS (D2)
TOROLOGY Tetland Hydrology Indicator Timary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		V S P F	Vater-Stai MLRA Salt Crust (Aquatic Inv Aydrogen S Dxidized R Presence o	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe	and 4B) es (B13) dor (C1) eres along ed Iron (C	Living Roc 4)	- - 	Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad	ned Leaves 1 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3)	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (CS (D2)
Proceedings of the second state of the second		V S H F F	Vater-Stail MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Dxidized R Presence of Recent Iron	ned Leav (, 2, 4A, a (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille	Living Roc 4) ed Soils (C6		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on <i>A</i> ic Position (quitard (D3) ral Test (D5)	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (CS (D2)
Procession of the second state of the second s	of one requi	V S C F S	Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Dxidized R Presence of Recent Iron Stunted or	ned Leav (3, 2, 4A, 4 (311) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E	Living Roc 4)		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C9 (D2)) 06) (LRR A)
Procession of the second states (BS) (BC) (C) (C) (C) (C) (C) (C) (C) (C) (C) (of one requi	— V — S — A — F — F — F (B7) _ 0	Vater-Stail MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Dxidized R Presence of Recent Iron	ned Leav (3, 2, 4A, 4 (311) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E	Living Roc 4) ed Soils (C6		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on <i>A</i> ic Position (quitard (D3) ral Test (D5)	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C9 (D2)) 06) (LRR A)
emarks: /DROLOGY /etland Hydrology Indicator imary Indicators (minimum 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 Aer Sparsely Vegetated Cond	of one requi	— V — S — A — F — F — F (B7) _ 0	Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Dxidized R Presence of Recent Iron Stunted or	ned Leav (3, 2, 4A, 4 (311) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E	Living Roc 4) ed Soils (C6		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C9 (D2)) 06) (LRR A)
Proceedings of the second state of the second	of one requi ial Imagery cave Surfac	— V — S — A — H — F — F — F — S (B7) — C xe (B8)	Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Dxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) ed Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C9 (D2)) 06) (LRR A)
Procession of the second state of the second s	of one requi ial Imagery cave Surfac Yes		Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen 3 Dxidized R Dresence of Recent Iron Stunted or Dther (Exp Depth (inc	ned Leav I, 2, 4A, a (B11) ertebrate Sulfide O hizosphe of Reduce h Reduct Stressed lain in Re	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) ed Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C9 (D2)) 06) (LRR A)
Procession of the second states (Constant) (of one requi ial Imagery cave Surfac Yes Yes	(B7) No_ <u>∑</u>	Vater-Stail MLRA 1 Salt Crust (Aquatic Inv lydrogen 3 Dxidized R Presence of Recent Iron Stunted or Dther (Exp Depth (inc Depth (inc	ned Leav I, 2, 4A, 4 (B11) ertebrate Sulfide O hizosphe of Reduct Stressed lain in Re ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) d Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An Frost-Heav	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E ve Hummoc	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C3 (D2)) 06) (LRR A) ks (D7)
Torn Deposits (B3) Curface Soil Cracks (B6) C	of one requi ial Imagery cave Surfac Yes		Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen 3 Dxidized R Dresence of Recent Iron Stunted or Dther (Exp Depth (inc	ned Leav I, 2, 4A, 4 (B11) ertebrate Sulfide O hizosphe of Reduct Stressed lain in Re ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) d Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E ve Hummoc	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C3 (D2)) 06) (LRR A) ks (D7)
emarks: //DROLOGY /etland Hydrology Indicator rimary Indicators (minimum 	tial Imagery cave Surfac Yes Yes Yes		Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen 3 Dxidized R Presence of Recent Iron Stunted or Dther (Exp Depth (inc Depth (inc Depth (inc	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) ed Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An Frost-Heat	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E ve Hummoc	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C3 (D2)) 06) (LRR A) ks (D7)
Provide a constant of the second discrete for the seco	tial Imagery cave Surfac Yes Yes Yes		Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen 3 Dxidized R Presence of Recent Iron Stunted or Dther (Exp Depth (inc Depth (inc Depth (inc	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) ed Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An Frost-Heat	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E ve Hummoc	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C3 (D2)) 06) (LRR A) ks (D7)
Vetland Hydrology Indicator Vetland Hydrology Indicator Inimary Indicators (minimum in 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 Aer	tial Imagery cave Surfac Yes Yes Yes		Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen 3 Dxidized R Presence of Recent Iron Stunted or Dther (Exp Depth (inc Depth (inc Depth (inc	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) ed Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An Frost-Heat	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E ve Hummoc	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C3 (D2)) 06) (LRR A) ks (D7)
emarks: //DROLOGY /etland Hydrology Indicator rimary Indicators (minimum 	tial Imagery cave Surfac Yes Yes Yes		Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen 3 Dxidized R Presence of Recent Iron Stunted or Dther (Exp Depth (inc Depth (inc Depth (inc	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) ed Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An Frost-Heat	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E ve Hummoc	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C3 (D2)) 06) (LRR A) ks (D7)
Vetland Hydrology Indicator rimary Indicators (minimum 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 Aer Sparsely Vegetated Cond Veter Table Present? Vater Table Present? Saturation Present?	tial Imagery cave Surfac Yes Yes Yes		Vater-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen 3 Dxidized R Presence of Recent Iron Stunted or Dther (Exp Depth (inc Depth (inc Depth (inc	ned Leav I, 2, 4A, a (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (E emarks)	Living Roc 4) ed Soils (C6 01) (LRR A		Water-Stai 4A, and Drainage F Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neutr Raised An Frost-Heat	ned Leaves 4 4B) Patterns (B1 n Water Tal Visible on A ic Position (quitard (D3) ral Test (D5) t Mounds (E ve Hummoc	(B9) (MLRA 1, 2 0) ble (C2) Aerial Imagery (C3 (D2)) 06) (LRR A) ks (D7)

pplicant/Owner: Pacificorp		State: WA Sampling Point: RW Z
vestigator(s): S. Caruana, B.	HorTon Section, Township, Ra	ange: <u>S23-T3N-RIGE</u>
andform (hillslope, terrace, etc.): Flood of	Local relief (concave,	convex, none): Flat Slope (%): </th
ubregion (LRR): A	Lat: 45.731733	Long: 121.521682 Datum: NAD 8
nil Man Unit Name: Unmapped - res		NWI classification: PEM
e climatic / hydrologic conditions on the site typical for		
re Vegetation N , Soil X , or Hydrology N		"Normal Circumstances" present? Yes X No
re Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N}		eeded, explain any answers in Remarks.)
		locations, transects, important features, etc
Hydrophytic Vegetation Present? Yes X	No	1
Hydric Soil Present? Yes X	No Is the Sample	d Area Ind? Yes X No
Wetland Hydrology Present? Yes X	No within a Wetla	ind? Yes <u>/ No</u>
Remarks: Due To a crass part	Times impo	sed by Tribal concern
All ale care	and the	
		vemotely (over)
EGETATION – Use scientific names of pl	ants.	
Tree Stratum (Plot size:)	Absolute Dominant Indicator	Dominance Test worksheet:
ree Stratum (Plot size:)		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
·		
		Total Number of Dominant Species Across All Strata: (B)
		···
	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B
Sapling/Shrub Stratum (Plot size:)		Prevalence Index worksheet:
Populus balsamifera		Total % Cover of: Multiply by:
Trichocarpa	1648 80	OBL species x 1 =
Lover estimate		FACW species x 2 =
		FAC species x 3 =
	= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)		UPL species x 5 =
Vegetation was visua	ully estimated	Column Totals: (A) (B)
usiby binoculars.	Splecies	Prevalence Index = B/A =
condposition and de	NSITies appear	Hydrophytic Vegetation Indicators:
Similar To The 2019	- Survey 11	1 - Rapid Test for Hydrophytic Vegetation
5		2 - Dominance Test is >50%
B		3 - Prevalence Index is ≤3.0 ¹
		 4 - Morphological Adaptations¹ (Provide supportin data in Remarks or on a separate sheet)
3		5 - Wetland Non-Vascular Plants ¹
9		Problematic Hydrophytic Vegetation ¹ (Explain)
10		¹ Indicators of hydric soil and wetland hydrology must
11	= Total Cover	be present, unless disturbed or problematic.
Noody Vine Stratum (Plot size:)		
1		Hydrophytic
2		Vegetation Present? Yes No
and the second second	= Total Cover	Flesent les NO
% Bare Ground in Herb Stratum		1
Remarks: Plot visually esti	mated from E	astbank And us 17 aller and entire Area
Rusher C T		
Dridde , (ollonwood	15 SUBBANIALY	aller and pulice thea

Access To Wethand RW-3 is only provided Via boat on The White Salmon viver. Raft Companies were Not running The Lower reach of The river during The Time of The Site investigation. Wethand parameters were Largehy estimated from Three valuage points using binoculars. Wethand indicators were inferred based on The 2014 site investigation. We Thand boundaries were visually estimated based off 2014 survey.

SOIL

Sampling Point: W-RW-3

Depth	Matelin	B. J. F. J.	
	Matrix Color (moist) %	<u>Redox Features</u> <u>Color (moist) % Type¹ Loc²</u>	Texture Remarks
0-3	104R 3/3		SIT
		54R 3/4 50 D M	
3-10		<u> 3 11 377 38 15 11</u>	Sang
			·
		M=Reduced Matrix, CS=Covered or Coated Sand Gra	
		all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A Histic Epip		Sandy Redox (S5) Stripped Matrix (S6)	2 cm Muck (A10) Red Parent Material (TF2)
Black Histi		Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)
	Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
	Below Dark Surface (A11)	Depleted Matrix (F3)	
	Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
	cky Mineral (S1)	X Depleted Dark Surface (F7)	wetland hydrology must be present,
the second se	eyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
	yer (if present):		
	es): 10		V. V.
Depth (inch		sually assessed a sually estimated.	Hydric Soil Present? Yes X No
YDROLOG	Y		
	ology Indicators:		
	ology Indicators: tors (minimum of one requi	red; check all that apply)	Secondary Indicators (2 or more required)
Primary Indicat	tors (minimum of one requi	red; check all that apply) Water-Stained Leaves (B9) (except	
Primary Indicat	tors (minimum of one requi later (A1) r Table (A2)		
Primary Indicat Surface W High Wate Saturation	tors (minimum of one requi later (A1) r Table (A2) (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Primary Indicat Surface W High Wate Saturation Water Mar	tors (minimum of one requi later (A1) r Table (A2) (A3) ks (B1)	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) 	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I	tors (minimum of one required later (A1) r Table (A2) (A3) ks (B1) Deposits (B2)	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) 	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos	tors (minimum of one requi later (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3)	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 Root	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 s (C3)
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o	tors (minimum of one requi later (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4)	 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 Presence of Reduced Iron (C4) 	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) s (C3) X Geomorphic Position (D2) Shallow Aquitard (D3)
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos	tors (minimum of one requi later (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	 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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 s (C3)
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Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation	tors (minimum of one requi later (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) bil Cracks (B6) Visible on Aerial Imagery	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) 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 s (C3)
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Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Surface Water	tors (minimum of one requi later (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) bil Cracks (B6) Visible on Aerial Imagery /egetated Concave Surface tions: Present? Yes	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) e (B8) No X Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9 s (C3) X Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Seld Observator Water Table Primary	tors (minimum of one requi later (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Imagery /egetated Concave Surface tions: Present? Yes X	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) e (B8) No Depth (inches): No Depth (inches):	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) s (C3) Z Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Field Observat Surface Water Vater Table Pr Saturation Press includes capilit	tors (minimum of one requi fater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Imagery regetated Concave Surface tions: Present? Yes resent? Yes sent? Yes	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) e (B8) No Depth (inches): No	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) s (C3) <u>X</u> Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes <u>X</u> No
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Field Observat Surface Water Nater Table Pr Saturation Press includes capilla	tors (minimum of one requi fater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Imagery regetated Concave Surface tions: Present? Yes resent? Yes sent? Yes	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) e (B8) No Depth (inches): No Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) S (C3) X Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes X No
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation Sparsely V Field Observar Surface Water Vater Table Pr Saturation Press includes capilla Describe Record	tors (minimum of one required fater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Imagery (regetated Concave Surface tions: Present? Yes resent? Yes sent? Yes sent? Yes ary fringe) rded Data (stream gauge, for	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) e (B8) No Depth (inches): <u>10</u> Wetlai monitoring well, aerial photos, previous inspections), if	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Y Saturation Visible on Aerial Imagery (C9 s (C3) Y Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) nd Hydrology Present? Yes X No
Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation Sparsely V Field Observar Surface Water Vater Table Pr Saturation Press includes capilla Describe Record	tors (minimum of one required fater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Imagery (regetated Concave Surface tions: Present? Yes resent? Yes sent? Yes sent? Yes ary fringe) rded Data (stream gauge, for	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) e (B8) No Depth (inches): <u>10</u> Wetlai monitoring well, aerial photos, previous inspections), if	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Y Saturation Visible on Aerial Imagery (C9 s (C3) Y Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) nd Hydrology Present? Yes X No
Arimary Indicate Surface W High Water Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation Sparsely V ield Observar Vater Table Pr aturation Press ncludes capilla Describe Record	tors (minimum of one required fater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Imagery (regetated Concave Surface tions: Present? Yes resent? Yes sent? Yes sent? Yes ary fringe) rded Data (stream gauge, for	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) e (B8) No Depth (inches): No	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Y Saturation Visible on Aerial Imagery (C9) s (C3) Y Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) nd Hydrology Present? Yes X No

WETLAND DETERMINATION	DATA FORM -	Western Mou	intains, Valleys, and Coast Region
roject/site: Condit	City	County: SKa	amania Sampling Date: 2/21/16
pplicant/Owner: Pacifi Corp		the second se	State: WA Sampling Point: Bu-3-4
vestigator(s): B. Horton S.Ca	ruana sec	tion, Township, Ra	100: S23-T3N-RIDE /
			convex, none): CODJEX Slope (%): <1%
ubregion (LRR):	Lat 4.5	731687	Long: 721, 522016 Datum: NAD&
bil Map Unit Name: 92 - Back autonop			
e climatic / hydrologic conditions on the site typical			
e Vegetation, Soil, or Hydrology			"Normal Circumstances" present? Yes X No
e Vegetation, Soil, or Hydrology	naturally problem	natic? (If ne	eeded, explain any answers in Remarks.)
		mpling point l	locations, transects, important features, etc.
	No X	In the Complet	4 4 4 4 4
Hydric Soil Present? Yes		Is the Sampled within a Wetla	
Vetland Hydrology Present? Yes	_ <u>No</u>		
Remarks: Due To access r	estrictio	ns impose	AccessTo weThand RW-3co.
EGETATION - Use scientific names of		-IDIEICY S	incress to well have involved
	State State State State State State	minant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)		ecies? Status	Number of Dominant Species
			That Are OBL, FACW, or FAC: (A)
•			Total Number of Dominant
			Species Across All Strata: (B)
			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)		otal Cover	That Are OBL, FACW, or FAC: <u>50</u> (A/B)
. Cylisus scoparius	60	4 uph	Prevalence Index worksheet:
2 / 1			$\frac{\text{Total \% Cover of:}}{\text{OBL species}} \frac{\text{Multiply by:}}{1.5} \times 1 = \frac{1.5}{1.5}$
3			FACW species x2 =
			FAC species $35 \times 3 = 255$
			FACU species x 4 =
Herb Stratum (Plot size:)	60 =1	otal Cover	UPL species 60 x5= 300
Inis Dseudacorus	15	OBL	Column Totals: 160 (A) 570 (B)
Trifohium repens	70	Y FAC	Prevalence Index = $B/A = 3.6$
Festuca rubra		FAC	Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
i			3 - Prevalence Index is ≤3.0 ¹
			4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3			5 - Wetland Non-Vascular Plants ¹
) 0			Problematic Hydrophytic Vegetation ¹ (Explain)
11.			¹ Indicators of hydric soil and wetland hydrology must
	100 =T	otal Cover	be present, unless disturbed or problematic.
Noody Vine Stratum (Plot size:)			
I			Hydrophytic
2			Vegetation Present? Yes No X
% Bare Ground in Herb Stratum	= T	otal Cover	

is only provided via boat on The White Salmon Biver, Baft companies were not running The Lower reach Of the river during The Time of the site investigation. We thand parameters were Langely estimated from Separate vantage points using binoculars, we thand Indicators were informed based on The 2014 site Investigation. We thand And upland boundaries Were visually estimated based upon the 2014 Survey.

SOIL

Sampling Point: Rw-3-upL

Depth <u>M</u> (inches) Color (mo		epth needed to document the indicator or co	
(inches) Color (mo	latrix	Redox Features	
		Color (moist) % Type ¹ Lo	pc ² Texture Remarks
2-14 10YR	3/2 100		Sand
	D=Depletion R	M=Reduced Matrix, CS=Covered or Coated Sa	and Grains. ² Location: PL=Pore Lining, M=Matrix.
		all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)		Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)		Loamy Mucky Mineral (F1) (except MLI	RA 1) Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4))	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark		Depleted Matrix (F3)	
_ Thick Dark Surface (A	(12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral	(S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix		Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if pres			
Type: Bedro			
Depth (inches):	4		Hydric Soil Present? Yes No X
VPPOLOOV			
Wetland Hydrology Indic			December 14 diseters (2 comparents institut)
Netland Hydrology Indic Primary Indicators (minimu			Secondary Indicators (2 or more required)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1)	um of one requi	Water-Stained Leaves (B9) (except	bt Water-Stained Leaves (B9) (MLRA 1, 2,
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2	um of one requi	Water-Stained Leaves (B9) (exception) MLRA 1, 2, 4A, and 4B)	Dt Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3)	um of one requi	Water-Stained Leaves (B9) (exception) MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1)	um of one requi	Water-Stained Leaves (B9) (exception of the stain of t	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B	um of one requi	 Water-Stained Leaves (B9) (exception of the stain of the	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	um of one requi	Water-Stained Leaves (B9) (exception of the second se	bt Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ng Roots (C3) Geomorphic Position (D2)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B Drift Deposits (B3) Algal Mat or Crust (B4	um of one requi	Water-Stained Leaves (B9) (exception of the second se	bt Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ng Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B Drift Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5)	<u>um of one requi</u>))))	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So	bt Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) mg Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) ills (C6) FAC-Neutral Test (D5)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (I	<u>um of one requi</u>)) 32) 4) B6)	Water-Stained Leaves (B9) (exception of the state of	bt
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (I Inundation Visible on	um of one requi 2) 4) B6) Aerial Imagery	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks)	bt Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) mg Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) ills (C6) FAC-Neutral Test (D5)
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (I Inundation Visible on Sparsely Vegetated C	um of one requi 2) 4) B6) Aerial Imagery	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks)	bt
Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (I Inundation Visible on Sparsely Vegetated C Field Observations:	um of one requi 2) 4) B6) Aerial Imagery Concave Surface	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Stunted or Stressed Plants (D1) (L (B7) Other (Explain in Remarks) e (B8)	bt
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Wetland Hydrology Indic Primary Indicators (minimulant) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (I Inundation Visible on Sparsely Vegetated C Field Observations: Surface Water Present? Water Table Present? Saturation Present?	um of one requi	Water-Stained Leaves (B9) (exception of the sector of	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ng Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) ills (C6) FAC-Neutral Test (D5) RR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (I Inundation Visible on Sparsely Vegetated C Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (um of one requi	Water-Stained Leaves (B9) (exception of the second state of t	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ng Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) ills (C6) FAC-Neutral Test (D5) RR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (I Inundation Visible on Sparsely Vegetated O Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	um of one requi	Water-Stained Leaves (B9) (exception of the second state of t	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ng Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) ills (C6) FAC-Neutral Test (D5) RR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Appendix B – Rating Forms

Wetland name or number: W-6a___

WETLAND RATING FORM -EASTERN 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): <u>W-6a</u>					Date	e of site visit:	7/21/16
Rated	by: <u>S. Ca</u>	<u>ruana</u>	Trained by Ecolo	ogy?]Yes [🛛 No	Γ	Date of training	g:
SEC:	<u>2</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 F</u>	East	Is S/T/F	R in Appen	dix D? 🗌 Ye	s 🖾 No	
		Map of wet	land unit: Figure	e <u>4</u>		Estimate	ed size <u>0.02</u>		
			SUMMA	ARY OF	RATIN	G			
Categ	ory based	on FUNCTIONS provi		ΠI				IV	
	Ca	tegory I = Score > 70		Score fo	or "Water	Quality" I	Functions	24	
	Cat	egory II = Score 51 -	69	Sco	ore for H	ydrologic I	Functions	6	
	Cate	egory III = Score 30 - :	50		Score fo	or Habitat I	Functions	23	
	Cate	egory IV = Score < 30			TOTAL	score for I	Functions	53	7
Catego	ory based o	on SPECIAL CHARAC	TERISTCS of We	tland:	I			Does not	Apply
		Final C	ategory (choos	e the "h	ighest" ca	ategory fro	om above")	Ι	
		Summary of I	basic information	about t	the wetla	nd unit.	-		
		Wetland Type	e			d Class			
		Vernal Pool Alkali		Depro River	essional				
		Natural Heritage We	etland		-fringe				
		Bog		Slope					
		Forest		Check	c if unit h	as multiple	e 🗖		
		None of the above			classes p				
Does t	If you	d being rated meet any answer YES to any of t tions regarding the spec	he questions below	w you w			ne wetland accor	ding to the	
Ch	eck List f	for Wetlands that Ne	ed Special and t	that are	e Not In	cluded in	the Rating	YES	NO
	<i>Endangere</i> For the pu	etland unit been docume ed animal or plant speci rposes of this rating sys deral database.	ies (T/E species)?	-	-				
	<i>Endangere</i> wetland is	etland unit been docume ed animal species? For on the appropriate state rized as Category 1 Nate	the purposes of the database. Note:	is rating Wetland	system, ls with St	"document tate listed p	ted" means the plant species		\boxtimes
SP3.	Does the w	vetland unit contain ind	ividuals of Priority	y species	s listed by	y the WDF	W for the state?		\boxtimes
	wetland ha	<i>vetland unit have a loca</i> as been identified in the management plan as hav	Shoreline Master	Program					\boxtimes

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number: W-6a___

Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern Washington

	f the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with nultiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.			
1.	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 ope surface) where at least 20 acres (8 ha) in size; At least 30% of the open water area is deeper than 3 m (10 ft)? 	en water (without any vegetation on the		
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacus	strine fringe)		
2.	Does the 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 (unidirection 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 types of wetlands ex shallow depressions or behind hummocks (depressions are usually 	cept occasionally in very small and		
	$\square \text{ NO} - \text{go to Step 3} \qquad \qquad \boxtimes \text{ YES} - \text{The wetland class is Slope}$			
3.	Is the wetland unit in a valley or stream channel where it gets inundated by ove In general, the flooding should occur at least once every ten years to answer "ye that are filled with water when the river is not flooding. NO – go to Step 4			
4.	Is the wetland unit in a topographic depression, outside areas that are inundated ponds, or is saturated to the surface, at some time of the year. <i>This means that interior of the wetland</i> .			
5.	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.			
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating		
	Slope + Riverine	Riverine		
	Slope + Depressional	Depressional		
	Slope + Lake-fringe Depressional + Riverine (riverine is within boundary of depression)	Lake-fringe Depressional		

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

Depressional

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outlet	•
	 We thank has an intermittently flowing outlet	3
	• Wetland has a permanently flowing surface outlet	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). \bigvee YES points = 3 \square NO points = 0	3
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent ungranded vegetation for $\lambda = 2/2$ of area	Figure 🗌
	 Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of area points = 3 	
	• Wetland has persistent, ungrazed vegetation from $1/10$ to $< 1/3$ of areapoints = 1	
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	5
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	F ¹
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	Figure 🗌
	• Area seasonally ponded is 1/4 to 1/2 total area of wetlandpoints = 1	
	• Area seasonally ponded is $< 1/4$ total area of wetland	1
	NOTE: See text for indicators of seasonal and permanent inundation/flooding Map of Hydroperiods Total for D 1 Add the points in the boxes above	12
		12
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	 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 	Multiplier
	Other XES multiplier is 2 INO multiplier is 1	2
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>	24
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion.	I
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
	 D 3.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet	4
	 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water). Marks of ponding are at least 3 ft. above the surface	2
	Total for D 3Add the points in the boxes above	6
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	6

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 1/3 area of wetland points = 6 • Depressions cover > 1/10 area of wetland points = 3 • If depressions present but cover < 1/10 area of wetland points = 1 • Depressions present but cover < 1/10 area of wetland points = 1 • No depressions present points = 0	Figure 🗌
	R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub > 2/3 the area of the wetland	Figure 🗌
	Total for R1 Add the points in the boxes above	
R 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. Other YES multiplier is 2 NO multiplier is 1	(see p. 46) Multiplier
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from P1 by the multiplier in P2, then record score on p 1 of field form	
	Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> . HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.	
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
	R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is between 1 and < 2	Figure 🗌
	 R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes):</i> Forest or shrub for more than 2/3 the area of the wetland	Figure <u></u>
	Total for R3Add the points in the boxes above	
R 4	Does the wetland have the opportunity to reduce flooding and erosion? Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other	(see p.50) Multiplier
	YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from R3 by the multiplier in R4.	
	Record score on p.1 of field form.	

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) wide points = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked	Figure 🛄
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure 🗌
	 Herbaceous plants cover > 1/3 of the vegetated area	
	Total for L1Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the	(see p.53)
	wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2	Multiplier
•	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2. Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (choose the highest scoring description that matches conditions in the wetland) • > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 6 • > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) widepoints = 4 • > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 4 • Vegetation is at least 6 ft. (2m) widepoints = 2 • Vegetation is less than 6 ft. (2m) widepoints = 0 Aerial photo or map with Cowardin vegetation classes	Figure
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	 Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 	Multiplier
	TOTAL – Hydrologic Functions Multiply the score from L3 by the multiplier L4.	
	Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	
	 S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 1 	Figure 🗌
	• Does not meet any of the criteria above for herbaceous vegetation	
	Total for S 1 Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 58)
~ _	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland	Multiplier
	Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Ĩ
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from S1 by the multiplier in S2. <i>Record score on p.1 of field form.</i>	
	HYDROLOGIC FUNCTIONS – Indicators that wetland 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.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	
	Total for S3Add the points in the boxes above	
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland has surface runoff that can cause flooding problems downgradient Other	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	

Comments: _____

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	H 1.1 <u>Categories of Vegetation structure</u> : Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres.	Figure <u> </u>
	Aquatic bed Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 - 6 typespoints = 3 3 typespoints = 2 Map of Cowardin vegetation classes and areas with different heights of emergents	1
	H 1.2 Is one of the vegetation types "aquatic bed?" (see p.64)	0
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands.	Figure 🗌
	YES = 3 points & go to H 1.4 \boxtimes NO = go to H 1.3.2H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?	0
	YES = 3 pointsNO = 0 pointsMap showing areas of open water	
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species points = 2 4 - 9 species points = 1 < 4 species points = 0 List species below if you wish:	1
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🗌
	None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Moderate = 2 points Figh = 3 points Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high".	2

	 H 1.6 Special Habitat Features (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number points you put into the next column. □ Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream ○ Cattails or bulrushes are present within the unit ○ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of edge ○ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ○ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs herbaceous, moss/ground cover) 	the 3 , = 6	
	H 1 TOTAL Score – potential to provide habitat Add the scores in the column all	ove 7)re
H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	per box)	
	H 2.1 Buffers (see P. 71): 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 "undisturb Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structur paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. points □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points □ No paved areas (except paved trails) or buildings within 80 ft (25m) of wetland > 95% circumference. points □ No paved areas of buildings within 170 ft (50m) of wetland or > 50% circumference. points □ No paved areas of buildings within 170 ft (50m) of wetland for > 50% circumference. points <td< td=""><td>$\begin{array}{c} ed''.\\ es \ or\\ = 5\\ = 4\\ = 4\\ = 3\\ = 3\\ = 3\\ = 2\\ = 2\\ = 1\\ = 0\end{array}$</td><td>1</td></td<>	$\begin{array}{c} ed''.\\ es \ or\\ = 5\\ = 4\\ = 4\\ = 3\\ = 3\\ = 3\\ = 2\\ = 2\\ = 1\\ = 0\end{array}$	1
	 H 2.2 Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridat least 1/4 mile long with surface water or water flowing water throughout most of the yea 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream pasture to edge of stream are considered breaks in the corridor). W YES = 4 points (go to H 2.3) H. 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "we corridor, OR a riverine wetland without a surface channel connecting to the stream? W YES = 2 points (go to H 2.3) H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? W YES = 1 point NO = 0 points 	at 5	

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>23</u>
	 Indicator of reduced habitat functions (see p. 75) Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. YES = 5 points NO = 0 points 	Points will be subtracted 0
Н3	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	D :
	H 2 TOTAL Score – opportunity for providing habitatAdd the scores in the columns above	16
	• Does not meet any of the four criteria above points = 0	
	• There is at least 1 wetland within $1/2$ mile points = 1	5
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	
	 paved roads, fill, fields, heavy boat traffic or other development points = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a	
	reservoirs.) points = 5	
	regime is not influenced by irrigation practices, dams, or water control structures. (Generally, this means outside boundaries of reclamation areas, irritation district, or	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water	
	H 2.4 Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)	
	If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points	4
	diameter at the largest end, and > 6 m (20 ft) long.	
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > $30 \text{ cm} (12 \text{ in})$ in eastern Washington and are > $2 \text{ m} (6.5 \text{ ft})$ in height. Priority logs are > $30 \text{ cm} (12 \text{ in})$ in	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay	
	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.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
	provide functional life history requirements for instream fish and wildlife resources.	
	 definition will be developed later in Fall 2008. (<i>check WDFW web site</i>) Instream: The combination of physical, biological, and chemical processes and conditions that interact to 	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
	conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).	
	 Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a 	
	oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>)	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics	
	 ✓ Old-growth/Mature forests (east of Cascade crest): (full descriptions in WDFW PHS report p. 157). Old- 	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>).	
	fish and wildlife (may include urban or urban growth areas) (full descriptions in WDFW PHS report p. 152).	
	 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 	
	<i>NOTE: the connections to the habitats can be disturbed.</i>	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit?	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.
ľ	SC1	Vernal pools (see p.79)	
	BCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?	
		Its only source of water is rainfall or snowmelt from a small contributing basin and has no	
		groundwater input.	
		Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
		annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a	
		vernal pool.	
		The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer	
		such as basalt or clay.	
		Surface water is present for less than 120 days during the "wet" season.	
		\square YES = Go to SC 1.1 \square NO not a vernal pool	
ł		SC 1.1 Is the vernal pool relatively undisturbed in February and March?	
		YES = Go to SC 1.2 NO = not a vernal pool with special	
		characteristics	
ł		SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	
		wetlands, rivers, lakes etc.)?	🗌 Cat. II
		$\square $ YES = Category II $\square $ NO = Category III	🗌 Cat. III
ł		Alkali wetlands (see p.81)	
l	SC2	Does the wetland unit meet one of the following two criteria?	
		The wetland has a conductivity $> 3.0 \text{ mS/cm}$.	
		The wetland has a conductivity > 3.0 mS/cm. The wetland has a conductivity between 2.0 – 3.0 mS, and more than 50% of the plant cover in the	
		wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali	
		systems).	
		If the wetland is dry at the time of your field visit, the central part of the area is covered with a	
		layer of salt.	
		OR does the wetland meet two of the following three sub-criteria?	
		Salt encrustations around more than 80% of the edge of the wetland.	
		More than 3/4 of the plant cover consists of species listed on Table 2.	
		A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	
		may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
		\square YES = Category I \square NO – not an alkali wetland	
ł	SC3	Natural Heritage Wetlands (see p. 82)	
	505	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
		SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?	
		(This question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square	
		SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state	
		threatened or endangered plant species?	Cat. I
ļ		\square YES = Category 1 \square NO – not a natural heritage wetland	

SC4	<u>Bogs</u> (see p. 82)	
~	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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.)	
	$\square YES = go to SC 4.3 \qquad \square NO = go to SC 4.2$	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \square YES = go to 4.3 \square NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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 = Category I bog NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	Cat. I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	
	$\square YES = Category 1 bog \qquad \square NO$	
SC5	Forested Wetlands (see p. 85)	
	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	<i>question H 1.1</i>) rooted within its boundary that meet at least one of the following three criteria?	
	The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	\square There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	YES = got o SC 5.1 I NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (<i>Thuja plicata</i>), Alaska yellow cedar	
	(<i>Chamaecyparis nootkatensis</i>), pine spp. mostly "white" pine (Pinus monticola), western hemlock	C-4 I
	(<i>Tsuga heterophylla</i>), Englemann spruce (<i>Picea engelmannii</i>)?	Cat. I
	\mathbf{X} YES = Category I I NO = go to SC 5.2	\boxtimes
	SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species?	C <u>at.</u> I
	$\square \textbf{ YES} = Category I \qquad \qquad \square \textbf{ NO} = go to SC 5.3$	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (alnus rubra), thin-leaf (A. tenuifolia);	
	Cottonwoods - narrow-leaf (Populus angustifolia), black (P. balsamifera); Willows - peach-leaf (Salix	
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis)	
	\square YES = Category II \square NO = go to SC 5.5	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	C-4 II
		Cat. II
	YES = Category II	
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	
	If you answered NO for all types enter "Not Applicable" on p. 1	Ī

Wetland name or number: W-6b__

WETLAND RATING FORM -EASTERN 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 o	of wetland (if known): <u>W-6b</u>				Date	e of site visit:	7/21/16
Rated b	by: <u>S. Caruana</u> Tra	ined by Ecolog	gy? 🗌 Yes	🛛 No	D	ate of training	g:
SEC:	<u>2</u> TWNSHP: <u>3 North</u>	RNGE: <u>10 E</u>	ast Is S/	Г/R in Appen	dix D? 🗌 Yes	s 🛛 No	
	Map of wetland	unit: Figure	<u>4</u>	Estimate	ed size <u>0.18</u>		
	SUMMARY OF RATING						
Catego	ry based on FUNCTIONS provided	by wetland:	Π	⊠ II		IV	
	Category I = Score > 70	5	Score for "Wa	ter Quality" I	Functions	24	
	Category II = Score 51 - 69		Score for	Hydrologic I	Functions	6	
	Category III = Score 30 - 50 Score for Habitat Functions		24				
	Category IV = Score < 30		TOTA	AL score for I	Functions	54	7
Catego	ry based on SPECIAL CHARACTER	ISTCS of Wet	land: 🛛 🖾 I			Does not	Apply
	Final Cate	gory (choose	e the "highest"	' category fro	m above")	Ι	
	Summary of basic	information	about the we	tland unit.			
	Wetland Type		Wetl	and Class			
	Vernal Pool		Depressiona	al			
	Alkali		Riverine				
	Natural Heritage Wetlan	d [Lake-fringe	•			
	Bog		Slope				
	Forest			t has multiple			
	None of the above		HGM classe	s present			
Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.							
Che	eck List for Wetlands that Need S	pecial and t	hat are Not i	Included in	the Rating	YES	NO
SP1. 1	Has the wetland unit been documented	as a habitat f	or any Federa	lly listed Thr	eatened or		
	Endangered animal or plant species (1						\boxtimes
	For the purposes of this rating system,	"documented"	means the wo	etland is on th	ne appropriate		
	tate or federal database.		<i>a</i> 11	1 71			
	Has the wetland unit been documented						
	<i>Endangered animal species?</i> For the prevention of the prevention of the appropriate state data						
	are categorized as Category 1 Natural 1						
	Does the wetland unit contain individu	•					
	Does the wetland unit have a local sign						
	vetland has been identified in the Shor n a local management plan as having s			Critical Areas	Ordinance, or		
1	n a rocar management pran as naving s	peerar signille	unce.			1	1

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number: W-6b___

Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern Washington

If t	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		
1.	. 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 open water (without any vegetation on the				
	surface) where at least 20 acres (8 ha) in size;				
	At least 30% of the open water area is deeper than 3 m (10 ft)?				
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacus	strine fringe)			
2.	Does the wetland unit meet all of the following criteria?				
	The wetland is on a slope (<i>slope can be very gradual</i>).				
	 The wetland is on a slope (<i>slope can be very gradual</i>). 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 types of wetlands exactly shallow depressions or behind hummocks (depressions are usually		,)		
		<5 ft diameter and less than a jobi deep	').		
	$\square \text{ NO} - \text{go to Step 3} \qquad \boxtimes \textbf{YES} - \text{The wetland class is Slope}$				
3.	Is the wetland unit in a valley or stream channel where it gets inundated by over	rbank flooding from that stream or river	?		
	In general, the flooding should occur at least once every ten years to answer "ye				
	that are filled with water when the river is not flooding.				
	\square NO – go to Step 4 \square YES – The wetland class is Riverine				
4.	Is the wetland unit in a topographic depression, outside areas that are inundated	by overbank flooding, in which water			
	ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the				
	interior of the wetland.				
	\square NO – go to Step 5 \blacksquare YES – The wetland class is Depressional				
5.	Your wetland unit seems to be difficult to classify and probably contains severa				
	seeps at the base of a slope may grade into a riverine floodplain, or a small stream				
	zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE				
	IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a following table to identify the appropriate class to use for the rating system if y		he		
			or		
	within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the				
	unit, classify the wetland using the class that represents more than 90% of the total area.				
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating			
	Slope + Riverine	Riverine			
	Slope + Depressional	Depressional			
	Slope + Lake-fringe	Lake-fringe			
	Depressional + Riverine (riverine is within boundary of depression)	Depressional			

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

Depressional

D	Depressional and Flat Wetlands				
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)			
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)			
	D 1.1 Characteristics of surface water flows out of the wetland unit:				
	 Wetland has no surface water outletpoints = 5 Wetland has an intermittently flowing outletpoints = 3 	2			
	• Wetland has a highly constricted permanently flowing outlet	3			
	• Wetland has a permanently flowing surface outlet				
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). \bigvee YES points = 3 \bigcirc NO points = 0	3			
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 X 	Figure 🗌			
	 Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of area points = 3 				
	• Wetland has persistent, ungrazed vegetation from $1/10$ to $< 1/3$ of areapoints = 1	_			
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	5			
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌			
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	rigure 📋			
	• Area seasonally ponded is $1/4$ to $1/2$ total area of wetland				
	• Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation/flooding	1			
-	NOTE: See text for inalcalors of seasonal and permanent inundation/flooding	12			
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland				
	 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 	Multiplier 2			
	$\square \text{ Other } ___ \qquad \qquad$				
٠	TOTAL – Water Quality Functions Multiply the score from D1 by D2. Record score on p. 1 of field form	24			
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.				
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)			
	D 3.1 Characteristics of surface water flows out of the wetland unit:				
	 Wetland has no surface water outlet	4			
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland				
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water).				
	• Marks of ponding are at least 3 ft. above the surface points = 8				
	 The wetland is a "headwater" wetland (see p. 39) points = 6 Marks are 2 ft. to < 3 ft. from surface points = 6 	2			
	• Marks are 1 ft. to < 2 ft. from surface				
	 Marks are 6 in. to < 1 ft. from surface				
	• No marks above 6 in. or wetland has only saturated solfs	6			
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)			
ען 4	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland	(see p. 42)			
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland is in a headwater of a river or stream that has flooding problems.				
	 Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems 	1			
	\Box Other YES multiplier is 2 \Box NO multiplier is 1	1			
	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form.</i>	6			

R	Riverine Wetlands	Points	
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality.	(only 1 score per box)	
R 1	Does the wetland unit have the potential to improve water quality?		
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 1/3 area of wetland		
	 No depressions present	Figure 🗌	
	Total for R1 Add the points in the boxes above		
R 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. Other YES multiplier is 2 NO multiplier is 1	(see p. 46) Multiplier	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .		
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.		
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)	
	R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is between 1 and < 2. points = 8 • If the ratio is 1/2 to < 1. points = 4 • If the ratio is 1/2 to < 1. points = 2 • If the ratio is 1/4 to < 1/2. points = 1 • If the ratio is < 1/4. points = 1 • R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or characteristics of rest or characteristics of restores of rest or characteristics of rest or	Figure 🗌	
	shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): • Forest or shrub for more than 2/3 the area of the wetland	,	
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p.50)	
	 Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other	Multiplier	
	YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from R3 by the multiplier in R4.		
•	<u>IOTAL</u> – Hydrologic Functions Record score on p.1 of field form.		

L	Lake-fringe Wetlands	Points	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		
L 1	Does the wetland have the <u>potential</u> to improve water quality?		
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) widepoints = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft widepoints = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft widepoints = 1 Map of Cowardin classes with widths marked		
	L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.		
	 Herbaceous plants cover > 90% of the vegetated area		
	Total for L1Add the points in the boxes above		
L 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the	(see p.53)	
	 wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2 NO multiplier is 1 		
•	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2. Record score on p.1 of field form.		
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.		
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)	
	 L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (choose the highest scoring description that matches conditions in the wetland) > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide points = 6 > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) wide points = 4 > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide points = 4 Vegetation is at least 6 ft. (2m) wide points = 2 Vegetation is less than 6 ft. (2m) wide points = 0 	Figure <u> </u>	
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)	
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1		
	TOTAL – Hydrologic Functions Multiply the score from L3 by the multiplier L4.		
	Record score on p.1 of field form.		

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	S 1.1 Characteristics of average slope of wetland: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	
	 S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 	Figure <u> </u>
	 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 	
	Aerial photo or map with vegetation polygons	
	Total for S 1Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 58)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier
	<u>TOTAL</u> – Water Quality Functions Multiply the score from S1 by the multiplier in S2.	
_	Record score on p.1 of field form.	
a a	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	(50)
S 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation> 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation> 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	
	Total for S3Add the points in the boxes above	
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61)	
	Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply</i> . Wetland has surface runoff that can cause flooding problems downgradient	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	

Comments: _____

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshola for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. □ Aquatic bed 	Figure 🗌
	 Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 I type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents 	2
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	0
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands.	Figure 🗌
	YES = 3 points & go to H 1.4 \boxtimes NO = go to H 1.3.2H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? \boxtimes NO = 0 pointsYES = 3 points \boxtimes NO = 0 points	0
	Map showing areas of open water	
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species points = 2 4 - 9 species points = 1 < 4 species points = 0 List species below if you wish:	1
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🗌
	None = 0 points $Low = 1$ point $Moderate = 2$ points Moderate = 2 points Moderate = 2 points Moderate = 2 points High = 3 points Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high". Use maps from H 1.1 and H 1.3	2

		 <u>becial Habitat Features</u> (see p. 68) <u>beck the habitat features that are present in the wetland unit</u>. The number of checks is the number of pints you put into the next column. Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream Cattails or bulrushes are present within the unit Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	3
	Н	1 TOTAL Score – potential to provide habitat Add the scores in the column above	8
H 2	Does the v	vetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	Cl cr Re pa C C C C C C C C C C C C T C C T C T C	Iffers (see P. 71): hoose the description that best represents condition of buffer of wetland unit. The highest scoring iterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". clatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or ving within undisturbed part of buffer. 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. points = 5 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. points = 4 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > > 95% circumference. points = 4 130 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > > > 50% circumference. points = 3 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water or > > 50% circumference. points = 3 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water or > > 50% circumference. points = 3	Figure []
	H H.	 et Corridors (see p. 72) 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (> 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not clude man-made ditches</i>)? YES = 1 point NO = 0 points 	5

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>24</u>
	H 3.1 Indicator of reduced habitat functions (see p. 75) Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. YES = 5 points NO = 0 points	Points will be subtracted 0
H 3		- ·
	H 2 TOTAL Score – opportunity for providing habitatAdd the scores in the columns above	17
	• Does not meet any of the four criteria above points = 0	
	• There is at least 1 wetland within 1/2 mile points = 1	5
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed points = 2	
	paved roads, fill, fields, heavy boat traffic or other development	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a	
	reservoirs.) points = 5	
	regime is not influenced by irrigation practices, dams, or water control structures. (Generally, this means outside boundaries of reclamation areas, irritation district, or	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water	
	H 2.4 Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	No Priority 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 H 2.4)	
	If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points	4
	diameter at the largest end, and > 6 m (20 ft) long.	
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > $30 \text{ cm} (12 \text{ in})$ in eastern Washington and are > $2 \text{ m} (6.5 \text{ ft})$ in height. Priority logs are > $30 \text{ cm} (12 \text{ in})$ in	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay	
	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.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
	provide functional life history requirements for instream fish and wildlife resources.	
	 definition will be developed later in Fall 2008. (<i>check WDFW web site</i>) Instream: The combination of physical, biological, and chemical processes and conditions that interact to 	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A	
	terrestrial ecosystems which mutually influence each other.	
	 conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and 	
	Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a	
	 oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) 	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics due to the influence of fire elimeter and soils. Mature: Stands $20 - 160$ yrs ald Decay decadence numbers of	
	Old-growth/Mature forests (east of Cascade crest): (full descriptions in WDFW PHS report p. 157). Old-	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>).	
	fish and wildlife (may include urban or urban growth areas) (full descriptions in WDFW PHS report p. 152).	
	 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 	
	<i>NOTE: the connections to the habitats can be disturbed.</i>	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit?	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ia are met.				
SC1	Vernal pools (see p.79)					
BCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?					
	Its only source of water is rainfall or snowmelt from a small contributing basin and has no					
	groundwater input.					
	Wetland plants are typically present only in the spring; the summer vegetation is typically upland					
	annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a					
	vernal pool.					
	The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer					
	such as basalt or clay.					
	Surface water is present for less than 120 days during the "wet" season.					
	\square YES = Go to SC 1.1 \square NO not a vernal pool					
	SC 1.1 Is the vernal pool relatively undisturbed in February and March?					
	characteristics					
	SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	🗌 Cat. II				
	wetlands, rivers, lakes etc.)?	Cat. III				
	$\square \ \mathbf{YES} = Category \ II \qquad \qquad \blacksquare \ \mathbf{NO} = Category \ III$					
SC2	<u>Alkali wetlands</u> (see p.81)					
~	Does the wetland unit meet one of the following two criteria?					
	The wetland has a conductivity > 3.0 mS/cm.					
	The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the					
	wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali					
	systems).					
	If the wetland is dry at the time of your field visit, the central part of the area is covered with a					
	layer of salt.					
	OR does the wetland meet two of the following three sub-criteria?					
	Salt encrustations around more than 80% of the edge of the wetland.					
	More than 3/4 of the plant cover consists of species listed on Table 2.					
	A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands					
	may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I				
	\square YES = Category I \square NO – not an alkali wetland					
SC3	Natural Heritage Wetlands (see p. 82)					
505	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as					
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or					
	Sensitive plant species.					
	SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?					
	(This question is used to screen out most sites before you need to contact WNHP/DNR.)					
	S/T/R information from Appendix D \Box or accessed from WNHP/DNR web site \Box					
	YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \boxtimes					
	SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state					
	threatened or endangered plant species?	Cat. I				
1	\square YES = Category 1 \square NO – not a natural heritage wetland					

SC4	<u>Bogs</u> (see p. 82)	
~	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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 SC 4.3 NO = go to SC 4.2	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \square YES = go to 4.3 \square NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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)?	
	\square YES = Category I bog \square NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	a . •
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
	$\Box \ \mathbf{YES} = Category \ 1 \ bog \qquad \boxtimes \ \mathbf{NO}$	
SC5	Forested Wetlands (see p. 85)	
	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	question H 1.1) rooted within its boundary that meet at least one of the following three criteria?	
	The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	There is at least $1/4$ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	YES = got o SC 5.1 I NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (Thuja plicata), Alaska yellow cedar	
	(Chamaecyparis nootkatensis), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I
	(Tsuga heterophylla), Englemann spruce (Picea engelmannii)?	\boxtimes
	YES = Category I I NO = go to SC 5.2	
	SC 5.2 Does the unit have areas where aspen (Populus tremuloides) as a dominant or co-dominant species?	Cat. I
	YES = Category I NO = go to SC 5.3	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (<i>alnus rubra</i>), thin-leaf (A. <i>tenuifolia</i>);	
	Cottonwoods – narrow-leaf (Populus angustifolia), black (P. balsamifera); Willows – peach-leaf (Salix	
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis)	
	\square YES = Category II \square NO = go to SC 5.5	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	C-4 II
	$\Box YES = Category II$	Cat. II
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	т
	If you answered NO for all types enter "Not Applicable" on p. 1	<u>1</u>

WETLAND RATING FORM -EASTERN 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 w	vetland (if known): <u>W-9</u>				Date	e of site visit:	7/20/16
Rated	by:	S. Caruana	rained by Ecolog	y? 🗌 Yes	🛛 No	D	ate of training	;:
SEC:	<u>2</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 Ea</u>	ust Is S/	Γ/R in Appen	dix D? 🗌 Yes	s 🛛 No	
		Map of wetla	nd unit: Figure	<u>4</u>	Estimate	d size <u>0.07</u>		
			SUMMAR	RY OF RATI	ING			
Categ	gory	based on FUNCTIONS provide						
		Category I = Score > 70		core for "Wa	ter Quality" F	Sunctions	12	
		Category II = Score $51 - 69$						
					Hydrologic F		12	
		Category III = Score 30 - 50			e for Habitat F		10	
		Category IV = Score < 30		TOTA	AL score for F	functions	34	
Categ	ory l	based on SPECIAL CHARACTI	ERISTCS of Wetla	and: 🗌 I			🛛 Does not	Apply
		Final Cat	tegory (choose	the "highest"	' category fro	m above")	III	
		Summary of ba	sic information a	bout the we	tland unit.	-		
		Wetland Type			and Class			
		Vernal Pool		Depression	al			
		Alkali Natural Heritage Wetl	and	Riverine Lake-fringe	<u>,</u>			
		Bog		Slope				
		Forest			t has multiple			
		None of the above		HGM classe	es present			
Does	the v	wetland being rated meet any o If you answer YES to any of the regulations regarding the specia	e questions below	you will nee		e wetland accord	ding to the	
Ch	neck	List for Wetlands that Need	l Special and th	at are Not	Included in	the Rating	YES	NO
SP1.		the wetland unit been document		r any Federa	lly listed Thre	eatened or		
		<i>langered animal or plant species</i> the purposes of this rating system		means the w	etland is on th	e annronriate		\boxtimes
		e or federal database.	in, documented	means the w				
SP2.	<i>End</i> wet	the wetland unit been document langered animal species? For the land is on the appropriate state d categorized as Category 1 Natura	e purposes of this atabase. Note: W	rating system Vetlands with	m, "document State listed p	ed" means the lant species		\boxtimes
SP3.	Doe	es the wetland unit contain indivi	duals of Priority	species listed	by the WDF	W for the state?		\boxtimes
SP4.	wet	es the wetland unit have a local s land has been identified in the Sl local management plan as havin	noreline Master Pr	rogram, the C				\boxtimes

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number	: W-9-SP-6
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Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern Washington

	the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with altiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.			
1.	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 ope surface) where at least 20 acres (8 ha) in size;	en water (without any vegetation on the		
	\square At least 30% of the open water area is deeper than 3 m (10 ft)?			
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacus	strine fringe)		
2.	Does the wetland unit meet all of the following criteria?			
	 The wetland is on a slope (<i>slope can be very gradual</i>). The water flows through the wetland in one direction (unidirection) 	al) and usually comes from seeps. It may	y	
	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 types of wetlands ex shallow depressions or behind hummocks (depressions are usually		,	
		S fi diameter and less than a jobi deep,	<i>)</i> .	
	$\square \text{ NO} - \text{go to Step 3} \qquad \boxtimes \textbf{YES} - \text{The wetland class is Slope}$			
3.	Is the wetland unit in a valley or stream channel where it gets inundated by ove	rbank flooding from that stream or river?		
	In general, the flooding should occur at least once every ten years to answer "years to answer "years" to	es". The wetland can contain depressions	5	
	that are filled with water when the river is not flooding.			
	\square NO – go to Step 4 \blacksquare YES – The wetland class is Riverine			
4.	Is the wetland unit in a topographic depression, outside areas that are inundated	by overbank flooding, in which water		
	ponds, or is saturated to the surface, at some time of the year. This means that			
	interior of the wetland.			
	\square NO – go to Step 5 \blacksquare YES – The wetland class is Depressional			
5.	Your wetland unit seems to be difficult to classify and probably contains severa			
	seeps at the base of a slope may grade into a riverine floodplain, or a small stread			
	zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a			
	following table to identify the appropriate class to use for the rating system if y		le	
	within your wetland. NOTE: Use this table only if the class that is recommended		or	
	more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the			
	unit, classify the wetland using the class that represents more than 90% of the total area.			
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating		
	Slope + Riverine	Riverine		
	Slope + Depressional	Depressional		
	Slope + Lake-fringe Depressional + Riverine (riverine is within boundary of depression)	Lake-fringe Depressional		
	Depressional + Riverine (riverine is within boundary of depression)	Depressional		

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

Depressional

D	Depressional and Flat Wetlands	Points			
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)			
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)			
	D 1.1 Characteristics of surface water flows out of the wetland unit:				
	 Wetland has no surface water outlet				
	 Wetland has a highly constricted permanently flowing outlet				
	• Wetland has a permanently flowing surface outletpoints = 1				
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). YES points = 3 NO points = 0				
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):				
	• Wetland has persistent, ungrazed vegetation for $> = 2/3$ of area points = 5	Figure 🗌			
	• Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of areapoints = 3				
	 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 				
	Map of Cowardin vegetation classes				
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌			
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 				
	 Area seasonally ponded is 1/2 total area of wetland				
	• Area seasonally ponded is $< 1/4$ total area of wetland				
	NOTE: See text for indicators of seasonal and permanent inundation/flooding				
	Total for D 1Add the points in the boxes above				
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?				
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient				
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit				
	may have pollutants coming from several sources, but any single source would qualify as opportunity.				
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland				
	Tilled fields or orchards within 150 ft. of wetland				
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed				
	fields, roads, or clear-cut logging	Multiplier			
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 				
	Other				
	YES multiplier is 2 NO multiplier is 1				
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>				
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.				
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)			
	D 3.1 Characteristics of surface water flows out of the wetland unit:				
	 Wetland has no surface water outletpoints = 8 Wetland has an intermittently flowing outletpoints - 4 				
	• Wetland has a highly constricted permanently flowing outlet points = 4				
	• Wetland has a permanently flowing surface outlet				
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland				
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water).				
	• Marks of ponding are at least 3 ft, above the surface points = 8				
	• The wetland is a "headwater" wetland (see p. 39) points = 6				
	 Marks are 2 ft. to < 3 ft. from surface				
	• Marks are 6 in. to < 1 ft. from surface				
	• No marks above 6 in. or wetland has only saturated soilspoints = 0	l			
	Total for D 3Add the points in the boxes above				
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)			
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland				
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources				
	from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>				
	Wetland is in a headwater of a river or stream that has flooding problems.	My-141-11			
	Wetland drains to a river or stream that has flooding problems	Multiplier			
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems				
	Other				
	YES multiplier is 2 INO multiplier is 1				
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .				

R				
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)		
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)		
	 R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 1/3 area of wetland	Figure 🗌		
	 Depressions cover > 1/10 area of wetland	1		
	R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes):	Figure 🗌		
	 Forest or shrub > 2/3 the area of the wetland	5		
	Total for R1Add the points in the boxes above	6		
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)		
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland	Multiplier		
	 The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. Other 	2		
	\square YES multiplier is 2 \square NO multiplier is 1	2		
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	<u>12</u>		
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.			
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)		
	R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is between 1 and < 2	Figure <u></u> 10		
	R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or	Figure		
	 shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub for more than 2/3 the area of the wetland	0		
	Total for R3 Add the points in the boxes above			
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding	(see p.50) Multiplier		
	YES multiplier is 2 NO multiplier is 1	2		
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from R3 by the multiplier in R4. <i>Record score on p.1 of field form.</i>	12		

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) wide points = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked	Figure <u> </u>
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure 🗌
	 Other vegetation that is not aquatic bed in > 1/3 vegetated area	
	Map with polygons of different vegetation types Total for L1 Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p.53)
	Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2 NO multiplier is 1	Multiplier
•	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2. Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	 L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (<i>choose the highest scoring description that matches conditions in the wetland</i>) > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide	Figure 🗌
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1	Multiplier
	TOTAL – Hydrologic FunctionsMultiply the score from L3 by the multiplier L4. Record score on p.1 of field form.	
	Record score on p.1 of fleta form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: <i>Choose the points</i>	Figure 🗌
	 appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 	Figure <u> </u>
	• Dense, woody, vegetation $> 1/2$ of unit	
	 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 	
	Aerial photo or map with vegetation polygons	
	Total for S 1Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 58)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland	Multiplier
	Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from S1 by the multiplier in S2. <i>Record score on p.1 of field form.</i>	
	HYDROLOGIC FUNCTIONS – Indicators that wetland 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.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	
	Total for S3Add the points in the boxes above	
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61)	
	Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply</i> . Wetland has surface runoff that can cause flooding problems downgradient	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed 	Figure 🗌
	 Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants > 12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 1 type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents 	0
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	0
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands.	Figure 🗌
	$\square \text{ YES} = 3 \text{ points & go to H 1.4} \qquad \qquad \square \text{ NO} = \text{go to H 1.3.2}$	
	H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?	0
	YES = 3 pointsNO = 0 pointsMap showing areas of open water	
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: > 9 species points = 2 4 - 9 species points = 1 < 4 species points = 0	0
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🗌
	None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 po	0

	 H 1.6 Special Habitat Features (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. □ Loose rocks larger than 4" <u>or</u> large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream □ Cattails or bulrushes are present within the unit □ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of th edge □ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity □ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	
	H 1 TOTAL Score – potential to provide habitat Add the scores in the column above	2 0
Н2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 71): 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 Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	
	 H 2.2 <u>Wet Corridors</u> (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream 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 unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? □ YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? □ YES = 1 point □ NO = 0 points 	

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>10</u>
	Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers.	Points will be subtracted 0
H 3	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	Points
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	5
	• Does not meet any of the four criteria above points = 0	
	• There is at least 1 wetland within 1/2 mile points = 1	5
	disturbed points = 2	_
	 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development	
	relatively undisturbed (light grazing in the connection or an open water connection along a	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	(Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs.)	
	regime is not influenced by irrigation practices, dams, or water control structures.	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water	
	H 2.4 Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	No Priority 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 H 2.4)	
	If wetland has 1 Priority Habitat = 2 points	4
	diameter at the largest end, and > 6 m (20 ft) long. If we land has 2 or more Priority Habitats = 4 points	
	30 cm (12 in) in eastern Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in	
	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 >	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	provide functional life history requirements for instream fish and wildlife resources.	
	 definition will be developed later in Fall 2008. (<i>check WDFW web site</i>) Instream: The combination of physical, biological, and chemical processes and conditions that interact to 	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
	conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).	
	Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a	
	 oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) 	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	snags, and quantity of large downed material is generally less than that found in old-growth.	
	due to the influence of fire, climate, and soils. Mature: Stands $80 - 160$ yrs old. Decay, decadence, numbers of	
	Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old- growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics	
	bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>).	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial	
	Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>).	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	NOTE: the connections to the habitats can be disturbed.	
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>). Which of the following priority habitats are within 330ft (100m) of the wetland unit?	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.					
SC1	Vernal pools (see p.79)						
SCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?						
	☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no						
	groundwater input.						
	Wetland plants are typically present only in the spring; the summer vegetation is typically upland						
	annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a						
	vernal pool.						
	The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer						
	such as basalt or clay.						
	Surface water is present for less than 120 days during the "wet" season.						
	$\square YES = Go to SC 1.1 \qquad \square NO not a vernal pool$						
	SC 1.1 Is the vernal pool relatively undisturbed in February and March?						
	YES = Go to SC 1.2 NO = not a vernal pool with special						
	characteristics						
	SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	🗌 Cat. II					
	wetlands, rivers, lakes etc.)?	🗍 Cat. III					
	YES = Category II NO = Category III						
SC2	Alkali wetlands (see p.81)						
	Does the wetland unit meet one of the following two criteria?						
	The wetland has a conductivity $> 3.0 \text{ mS/cm}$.						
	The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the						
	wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali						
	systems).						
	If the wetland is dry at the time of your field visit, the central part of the area is covered with a						
	layer of salt.						
	OR does the wetland meet two of the following three sub-criteria?						
	Salt encrustations around more than 80% of the edge of the wetland.						
	More than 3/4 of the plant cover consists of species listed on Table 2.						
	A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands						
	may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I					
	$\square \textbf{YES} = Category I \qquad \qquad \blacksquare \textbf{NO} - not an alkali wetland$						
SC3	Natural Heritage Wetlands (see p. 82)						
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as						
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or						
	Sensitive plant species.						
	SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?						
	(This question is used to screen out most sites before you need to contact WNHP/DNR.)						
	S/T/R information from Appendix D or accessed from WNHP/DNR web site						
	YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square						
	SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state	a					
	threatened or endangered plant species?	Cat. I					
	\square YES = Category 1 \square NO – not a natural heritage wetland						

SC4	Bogs (see p. 82)	
501	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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.)	
	$\square YES = go to SC 4.3 \qquad \square NO = go to SC 4.2$	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \Box YES = go to 4.3 \Box NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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 = Category I bog NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	C-4 I
		Cat. I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	
	YES = Category 1 bog NO	
SC5	Forested Wetlands (see p. 85)	
505	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	question H 1.1) rooted within its boundary that meet at least one of the following three criteria?	
	\square The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	YES = got o SC 5.1 NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (<i>Thuja plicata</i>), Alaska yellow cedar	
	(<i>Chamaecyparis nootkatensis</i>), pine spp. mostly "white" pine (Pinus monticola), western hemlock	C-4 I
	(<i>Tsuga heterophylla</i>), Englemann spruce (<i>Picea engelmannii</i>)?	Cat. I
	$\square \ \mathbf{YES} = \text{Category I} \qquad \qquad \blacksquare \ \mathbf{NO} = \text{go to SC 5.2}$	
	SC 5.2 Does the unit have areas where aspen (Populus tremuloides) as a dominant or co-dominant species?	Cat. I
	YES = Category I NO = go to SC 5.3	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (<i>alnus rubra</i>), thin-leaf (A. <i>tenuifolia</i>);	
	Cottonwoods – narrow-leaf (<i>Populus angustifolia</i>), black (<i>P. balsamifera</i>); Willows – peach-leaf (Salix	
		~
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis)	
	YES = Category II NO = go to SC 5.5	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	\square YES = Category II	
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	
	If you answered NO for all types enter "Not Applicable" on p. 1	

Wetland name or number	:: W-10
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WETLAND RATING FORM -EASTERN 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 w	etland (if known): <u>W-10</u>					Date	of site visit:	7/19/16
Rated	by:	<u>S. Caruana</u> Tr	rained by Ecolo	gy?]Yes	No No	D	ate of training	g:
SEC:	<u>3</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 E</u>	East	Is S/T/I	R in Appen	dix D? 🗌 Yes	s 🛛 No	
		Map of wetlar	nd unit: Figuro	e <u>3</u>		Estimate	d size <u>0.02</u>		
			SUMMA	RV OF	PATIN	C			
Cotog	ory b	based on FUNCTIONS provide				□п			
Categ	UI Y L	Jased on FONCTIONS provide	u by wettanu.						
		Category I = Score > 70		Score f	or "Water	r Quality" H	Functions	6	
		Category II = Score 51 - 69		Sc	ore for H	ydrologic H	Functions	6	
		Category III = Score 30 - 50			Score fo	or Habitat H	Functions	29	
		Category IV = Score < 30			TOTAL	score for H	Functions	41	
Categ	ory b	ased on SPECIAL CHARACTE	 RISTCS of Wet	tland:	ΠI			Does not	Apply
		Final Cat	egory (choos	e the "h	ighest" c	ategory fro	m above")	III	7
		Summary of bas Wetland Type		about		nd Class			
		Vernal Pool		Depr	essional				
		Alkali		Rive					
		Natural Heritage Wetla	ind 🗌		-fringe				
		Bog		Slope					
		Forest				nas multiple			
		None of the above		HGM	classes p	present			
Does (etland being rated meet any of If you answer YES to any of the regulations regarding the special	questions below	w you w			ne wetland accord	ding to the	
Ch	eck	List for Wetlands that Need	Special and t	that ar	e Not In	cluded in	the Rating	YES	NO
SP1.		the wetland unit been documente		for any	Federally	v listed Thre	eatened or		
		ingered animal or plant species							\boxtimes
	For t	he purposes of this rating system or federal database.	n, "documented	" means	s the wetl	and is on th	ne appropriate		
CD2			- 1 1			Thurs	1		
SP2.		the wetland unit been documente angered animal species? For the							
		and is on the appropriate state da							\boxtimes
		ategorized as Category 1 Natura							
SP3.	Does	s the wetland unit contain individ	luals of Priority	y specie	s listed b	y the WDF	W for the state?		\boxtimes
SP4.		s the wetland unit have a local si							
	wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or								
in a local management plan as having special significance.				1					

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number:	W-10
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Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern Washington

	f the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with nultiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.				
1.	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 ope surface) where at least 20 acres (8 ha) in size;	en water (without any vegetation on the			
	At least 30% of the open water area is deeper than 3 m (10 ft)?				
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacu	strine fringe)			
2.	Does the 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 (unidirection 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 types of wetlands ex shallow depressions or behind hummocks (depressions are usually 	cept occasionally in very small and			
	$\square \text{ NO} - \text{go to Step 3} \qquad \boxtimes \textbf{YES} - \text{The wetland class is Slope}$				
3.	In general, the flooding should occur at least once every ten years to answer "yes". The wetland can contain depressions that are filled with water when the river is not flooding.				
	$\square \text{ NO} - \text{go to Step 4} \qquad \boxtimes \text{ YES} - \text{The wetland class is Riverine}$				
4.	Is the wetland unit in a topographic depression, outside areas that are inundated ponds, or is saturated to the surface, at some time of the year. <i>This means that interior of the wetland</i> .				
	\square NO – go to Step 5 \square YES – The wetland class is Depressional				
5.	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.				
	HGM Classes Within One Delineated Wetland BoundaryClass to Use for Rating				
	Slope + Riverine	Riverine			
	Slope + Depressional	Depressional			
	Slope + Lake-fringe	Lake-fringe			
	Depressional + Riverine (riverine is within boundary of depression)	Depressional			

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

Depressional

D	Depressional and Flat Wetlands	Points				
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)				
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)				
	D 1.1 Characteristics of surface water flows out of the wetland unit:					
	 Wetland has no surface water outletpoints = 5 Wetland has an intermittently flowing outletpoints = 3 					
	• Wetland has a highly constricted permanently flowing outlet					
	• Wetland has a permanently flowing surface outlet					
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). YES points = 3 NO points = 0					
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 	Figure 🗌				
	 Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of areapoints = 3 					
	• Wetland has persistent, ungrazed vegetation from $1/10$ to $< 1/3$ of areapoints = 1					
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes					
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.					
	Do not count the area that is permanently ponded.	Figure 🗌				
	 Area seasonally ponded is > 1/2 total area of wetland points = 3 Area seasonally ponded is 1/4 to 1/2 total area of wetland points = 1 					
	 Area seasonally ponded is <1/4 total area of wetland					
	NOTE: See text for indicators of seasonal and permanent inundation/flooding					
	Total for D 1Add the points in the boxes above					
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?					
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into					
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit					
	<u>may</u> have pollutants coming from several sources, but any single source would qualify as opportunity.					
	Grazing in the wetland or within 150 ft					
	 Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland 					
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed					
	fields, roads, or clear-cut logging	Multiplier				
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 					
	Other					
	YES multiplier is 2 Image: NO multiplier is 1					
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>					
D 3	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)				
D 3	D 3.1 Characteristics of surface water flows out of the wetland unit:	(see p.39)				
	• Wetland has no surface water outlet					
	• Wetland has an intermittently flowing outlet					
	 Wetland has a highly constricted permanently flowing outlet					
	• Wetland has a permanently flowing surface outletpoints = 0 D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the surface of the wetland</i>					
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest					
	 elevation of "permanent" water). Marks of ponding are at least 3 ft. above the surface points = 8 					
	 Marks of ponding are at least 3 ft. above the surface					
	• Marks are 2 ft. to < 3 ft. from surface					
	• Marks are 1 ft. to < 2 ft. from surface					
	 Marks are 6 in. to < 1 ft. from surfacepoints = 2 No marks above 6 in. or wetland has only saturated soilspoints = 0 					
	Total for D 3Add the points in the boxes above					
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)				
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland					
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood					
	storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>					
	Wetland is in a headwater of a river or stream that has flooding problems.					
	Wetland drains to a river or stream that has flooding problems	Multiplier				
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems					
	Other					
	YES multiplier is 2 INO multiplier is 1					
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .					

R	Riverine Wetlands	Points				
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)				
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)				
	 R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 1/3 area of wetland	Figure 🗌				
	 Depressions cover > 1/10 area of wetland	1				
	height. This is not Cowardin vegetation classes):	Figure 🗌				
	 Forest or shrub > 2/3 the area of the wetland	5				
	Total for R1 Add the points in the boxes above	6				
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)				
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality					
	standards. Other YES multiplier is 2 NO multiplier is 1	1				
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	<u>6</u>				
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.					
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)				
	 R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. If the ratio is 2 or more	Figure 🛄 1				
	R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or</i>	Figure				
	 shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub for more than 2/3 the area of the wetland	2				
	Total for R3 Add the points in the boxes above					
R 4	 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. □ There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. □ There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding 	(see p.50) Multiplier				
	Other XES multiplier is 2					
•	TOTAL – Hydrologic Functions Multiply the score from R3 by the multiplier in R4. Record score on p.1 of field form.	<u>6</u>				

L	Lake-fringe Wetlands	Points			
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)			
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)			
	 L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33 ft. (10m) wide points = 6 Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked 	Figure 🗌			
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure <u> </u>			
	• Aquatic bed cover > 2/3 of the vegetated areapoints = 0 Map with polygons of different vegetation types				
	Total for L1 Add the points in the boxes above				
L 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p.53)			
	Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other				
٠	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2. Record score on p.1 of field form.				
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.				
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)			
	 L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (<i>choose the highest scoring description that matches conditions in the wetland</i>) > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide	Figure <u> </u>			
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)			
	 Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 	Multiplier			
	TOTAL – Hydrologic Functions Multiply the score from L3 by the multiplier L4.				
	Record score on p.1 of field form.				

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	
	 Slope is 5% or greaterpoints = 0 S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (use NRCS definitions of soil types). YES = 3 points NO = 0 points 	
	 S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 	Figure <u> </u>
	 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 	
	Aerial photo or map with vegetation polygons	
	Total for S 1 Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	(see p. 58)
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other	Multiplier
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from S1 by the multiplier in S2. <i>Record score on p.1 of field form.</i>	
	HYDROLOGIC FUNCTIONS – Indicators that wetland 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.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	
	Total for S3Add the points in the boxes above	
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland has surface runoff that can cause flooding problems downgradient Other	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	

Comments: _____

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetatian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed 	Figure 🗌
	 Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants > 12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 I type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents 	1
	H 1.2 Is one of the vegetation types "aquatic bed?" (see p.64)	1
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands.	Figure 🗌
		3
	YES = 3 points \square NO = 0 pointsMap showing areas of open water	C
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species 4 - 9 species < 4 species List species below if you wish:	1
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🗌
	None = 0 points Low = 1 point Moderate = 2 points None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Figh = 3 points Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high".	2

	H 1.6	 Special Habitat Features (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream Cattails or bulrushes are present within the unit Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	3
		H 1 TOTAL Score – potential to provide habitatAdd the scores in the column above	
Н2	2 Does the wetland have the <u>opportunity</u> to provide habitat for many species?		(only 1 score per box)
	H 2.1	Buffers (see P. 71): 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". Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer. S30 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	Figure □
	H 2.2	Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (> 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, or pasture to edge of stream are considered breaks in the corridor). Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water flowing seasonally for the stream seasonal stream, or lake (do not include man-made ditches)? <th>5</th>	5

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>29</u>
	Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers.	Points will be subtracted 0
Н3	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	Points
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	19
	Does not meet any of the four criteria above	10
	 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed points = 2 There is at least 1 wetland within 1/2 mile points = 1 	5
	 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development	
	 The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs.)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4H 2.4Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points	4
	 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 > 30 cm (12 in) in eastern 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. 	
	 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, 	
	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.	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A definition will be developed later in Fall 2008. (<i>check WDFW web site</i>)	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
	 Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover). 	
	 oregon white Oak. Woodiands stands of pure oak of oak conner associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) 	
	 growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the 	
	bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>). Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old- growth: Stands are ≥ 150 yrs in are: may be variable in tree species composition and structural characteristics	
	 Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>). Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial 	
	NOTE: the connections to the habitats can be disturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>). Which of the following priority habitats are within 330ft (100m) of the wetland unit?	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.
ľ	SC1	Vernal pools (see p.79)	
	BCI	Is the wetland unit less than 4,000 ft^2 , and does it meet at least two of the following criteria?	
		Its only source of water is rainfall or snowmelt from a small contributing basin and has no	
		groundwater input.	
		Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
		annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a	
		vernal pool.	
		The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer	
		such as basalt or clay.	
		Surface water is present for less than 120 days during the "wet" season.	
		YES = Go to SC 1.1 \square NO not a vernal pool	
ł		SC 1.1 Is the vernal pool relatively undisturbed in February and March?	
		YES = Go to SC 1.2 NO = not a vernal pool with special	
		characteristics	
		SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	🗌 Cat. II
		wetlands, rivers, lakes etc.)?	🗌 Cat. III
		YES = Category II NO = Category III	
	SC2	<u>Alkali wetlands</u> (see p.81)	
		Does the wetland unit meet one of the following two criteria?	
		The wetland has a conductivity > 3.0 mS/cm.	
		The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the	
		wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali	
		systems).	
		If the wetland is dry at the time of your field visit, the central part of the area is covered with a	
		layer of salt.	
		OR does the wetland meet two of the following three sub-criteria?	
		Salt encrustations around more than 80% of the edge of the wetland.	
		More than 3/4 of the plant cover consists of species listed on Table 2.	
		A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	
		may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
		YES = Category I NO – not an alkali wetland	
	SC3	Natural Heritage Wetlands (see p. 82)	
ĺ	~~~~	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
		SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?	
		(This question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square	
		SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state	
		threatened or endangered plant species?	Cat. I
		\square YES = Category 1 \square NO – not a natural heritage wetland	

SC4 Bogs (see p. 82) Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still meed to rate the wetland based on its functions. SC4.1 Does the wetland 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.) SC4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedreck or an impermeable hardpan such as clay or volcanic sub, or that are loss than 16 inches deep over bedreck or an impermeable hardpan such as clay or volcanic sub, or that are loss than 16 inches deep over the vegetation (more than 30% of the total short) and perface ous organic soils of species). The bedreck or an upper south from any may rare within its boundaries. AND other plants, if present, consist of the "06," species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shut as species source) rows substitute that criterion by may part of it, frostsed (> 30% covery with sitk sprace, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western while B as a significant component of the ground cover (> 30% covery with sitk sprace, subalpine fir, western in gaestion H 1.1) rooted within its boundary that meet at least one of the following three criteria? The western well within the value area of forest (you should have identified a forested class, if present, in gaestion H 1.1) rooted within its boundary that meet at least one or the following three criteria? The wetland with met an area of forest (you should have identified a forested class, if present, in gaestion H 1.1) rooted within its boundary that meet at least one of the following three criteria? The wetland with we an area of forest (y			
in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions. SC 4.1 Does the wetland 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.) YE 5 = go to SC 4.3 □ 0 = go to SC 4.3 SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic sah, or that are floating on top of a lake or pond? YE 5 = go to 3.3 □ NO = is not a bog for rating SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries. AND other plants, if present, consist of the "hog" 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) on the go to question 4.4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitue that criterion by measuring the pH of the water that seeps into a hole dug at least 10 ^{6°} deep. If the pH is less than 5.0 and the "bog" plant species plant its in Table 3 as espinificant component of the species or combination of species) on the bog species plant lis in Table 3 as a big. SC 4.4 Is the unit, or species () Tools 4 within its boundary that meet at least one of the following three criteria? Q The wetland list within the "100 year? Hoodplain of a river or stream. Q The wetland is within the "100 year? Hoodplain of a river or stream. <th>SC4</th> <th>Bogs (see p. 82)</th> <th></th>	SC4	Bogs (see p. 82)	
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Does the wetland unit have an area of forest (you should have identified a forested class, if present, in question H 1.1) rooted within its boundary that meet at least one of the following three criteria? □ The wetland is within the "100 year" floodplain of a river or stream. □ Aspen (Populus tremuloides) are a dominant or co-dominant of the "woody" vegetation. (Dominants means it represents at least 50% of the cover of woody species, co-dominant means it represents at least 20% of the total cover of woody species.) □ There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see p. 83). □ YES = got o SC 5.1 NO – not a forested wetland with special characteristics SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees? Slow growing trees are: western red cedar (Thuja plicata), Alaska yellow cedar (Chamaecyparis nootkatensis), pine spp. mostly "white" pine (Pinus monticola), western hemlock (Tsuga heterophylla), Englemann spruce (Picea engelmannii)? Cat. I □ YES = Category I NO = go to SC 5.2 SC 5.2 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast growing species? Fast growing species are: Alders – red (alnus rubra), thin-leaf (A. tenuifolia); Cottonwoods – narrow-leaf (Populus angustifolia), black (P. balasamifera); Willows – peach-leaf (Salix amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen –			
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• Choose the "highest" rating if wetland falls into several categories.			لالتع
			II

WETLAND RATING FORM -EASTERN 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 w	vetland (if known): <u>W-12</u>					Date	of site visit:	7/20/16
Rated	by:	<u>S. Caruana</u> Tra	ained by Ecolo	gy?]Yes	🛾 No	D	ate of training	g:
SEC:	<u>3</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 E</u>	last	Is S/T/F	R in Append	lix D? 🗌 Yes	s 🛛 No	
		Map of wetland	l unit: Figure	e <u>3</u>		Estimate	d size <u>0.10</u>		
			SUMMA	RY OF	RATIN	G			
Categ	gory	based on FUNCTIONS provided		ΠI		ΠI		IV	
		Category I = Score > 70] :	Score fo	or "Water	Quality" F	unctions	12	
		Category II = Score 51 - 69		Sco	ore for H	ydrologic F	unctions	10	
		Category III = Score 30 - 50			Score fo	or Habitat F	unctions	13	
		Category IV = Score < 30			TOTAL	score for F	unctions	35	7
Categ	ory l	based on SPECIAL CHARACTER	ISTCS of Wet	tland:	ΠI			🛛 Does not	Apply
		Final Cate	gory (choose	e the "h	ighest" ca	ategory from	m above")	III	
		Summary of basic	c information	about t	he wetla	nd unit.	_		
		Wetland Type			Wetlan	d Class			
		Vernal Pool			essional				
		Alkali		River					
		Natural Heritage Wetlan Bog		Slope	fringe				
		Forest				as multiple			
		None of the above			classes p	1			
Does	the v	vetland being rated meet any of t If you answer YES to any of the q	uestions below	v you w			e wetland accore	ding to the	
		regulations regarding the special of						ALL C	NO
		List for Wetlands that Need S						YES	NO
SP1.		the wetland unit been documented		for any 1	Federally	listed Thre	eatened or		
		<i>langered animal or plant species</i> () the purposes of this rating system,		" maans	the weth	and is on th	aannronriata		\boxtimes
		e or federal database.	documented	means	the weth				
SP2.		the wetland unit been documented	l as habitat for	r anv Sta	ate listed	Threatened	l or		
		langered animal species? For the							\boxtimes
		land is on the appropriate state data							
~~~		categorized as Category 1 Natural	•		÷		-		
SP3.		es the wetland unit contain individu	× •				•		$\boxtimes$
SP4.		es the wetland unit have a local sig							$\boxtimes$
		land has been identified in the Sho local management plan as having			i, the Cfl	lical Areas	Orumance, or		

#### 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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number:	W-12
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Depressional + Lake-fringe

#### **Classification of Vegetated Wetlands for Eastern Washington**

	he hydrologic criteria listed in each question do not apply to the entire unit being ltiple HGM classes. In this case, identify which hydrologic criteria in questions		
1.	<ul> <li>Does the entire wetland unit meet both of the following criteria?</li> <li>The vegetated part of the wetland is on the shores of a body of ope surface) where at least 20 acres (8 ha) in size;</li> <li>At least 30% of the open water area is deeper than 3 m (10 ft)?</li> </ul>	en water (without any vegetation on the	
	$\square$ NO – go to Step 2 $\square$ YES – The wetland class is Lake-fringe (lacu	strine fringe)	
2.	Does the wetland unit <b>meet all</b> of the following criteria?		
	<ul> <li>The wetland is on a slope (slope can be very gradual).</li> <li>The water flows through the wetland in one direction (unidirection flow subsurface, as sheetflow, or in a swale without distinct banks</li> <li>The water leaves the wetland without being impounded?</li> <li>NOTE: Surface water does not pond in these types of wetlands ex shallow depressions or behind hummocks (depressions are usually</li> </ul>	cept occasionally in very small and	
	$\square \text{ NO} - \text{go to Step 3} \qquad \boxtimes \textbf{YES} - \text{The wetland class is Slope}$		
3.	Is the wetland unit in a valley or stream channel where it gets inundated by ove In general, the flooding should occur at least once every ten years to answer "ye that are filled with water when the river is not flooding. NO – go to Step 4		
4.	Is the wetland unit in a topographic depression, outside areas that are inundated ponds, or is saturated to the surface, at some time of the year. <i>This means that interior of the wetland</i> .		
	$\square$ NO – go to Step 5 $\square$ YES – The wetland class is <b>Depressional</b>		
5.	Your wetland unit seems to be difficult to classify and probably contains several seeps at the base of a slope may grade into a riverine floodplain, or a small stree zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a following table to identify the appropriate class to use for the rating system if y within your wetland. NOTE: Use this table only if the class that is recommended more of the total area of the wetland unit being rated. If the area of the class list unit, classify the wetland using the class that represents more than 90% of the total section.	am within a depressional wetland has a E HYDROLOGIC REGIMES DESCRIBE rough sketch to help you decide). Use th ou have several HGM classes present ed in the second column represents 10% of sted in column 2 is less than 10% of the	ne
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating	
	Slope + Riverine	Riverine	
	Slope + Depressional	Depressional	
	Slope + Lake-fringeDepressional + Riverine (riverine is within boundary of depression)	Lake-fringe Depressional	

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

Depressional

D	Depressional and Flat Wetlands			
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)		
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)		
	D 1.1 Characteristics of surface water flows out of the wetland unit:			
	<ul> <li>Wetland has no surface water outlet</li></ul>			
	<ul> <li>Wetland has a highly constricted permanently flowing outlet</li></ul>			
	• Wetland has a permanently flowing surface outlet			
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definition of soil types</i> ). <b>YES</b> points = 3 $\square$ <b>NO</b> points = 0			
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):			
	• Wetland has persistent, ungrazed vegetation for $> = 2/3$ of area	Figure 🗌		
	• Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of areapoints = 3			
	• Wetland has persistent, ungrazed vegetation from $1/10$ to $< 1/3$ of areapoints = 1			
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes			
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	<b></b>		
	Do not count the area that is permanently ponded.	Figure 🗌		
	<ul> <li>Area seasonally ponded is &gt; 1/2 total area of wetland points = 3</li> <li>Area seasonally ponded is 1/4 to 1/2 total area of wetland points = 1</li> </ul>			
	<ul> <li>Area seasonally ponded is &lt;1/4 total area of wetland</li></ul>			
	NOTE: See text for indicators of seasonal and permanent inundation/flooding Map of Hydroperiods			
	Total for D 1Add the points in the boxes above			
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?			
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into			
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants.</i> A unit			
	may have pollutants coming from several sources, but any single source would qualify as opportunity.			
	Grazing in the wetland or within 150 ft			
	Untreated stormwater discharges to wetland			
	<ul> <li>Tilled fields or orchards within 150 ft. of wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed</li> </ul>			
	fields, roads, or clear-cut logging	Multiplier		
	<ul> <li>Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> </ul>	_		
	Wetland is fed by groundwater high in phosphorus or nitrogen Other			
	$\square YES multiplier is 2 \square NO multiplier is 1$			
	<b><u>TOTAL</u></b> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>			
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.			
<b>D</b> 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)		
	D 3.1 Characteristics of surface water flows out of the wetland unit:			
	<ul> <li>Wetland has no surface water outletpoints = 8</li> <li>Wetland has an intermittently flowing outletpoints - 4</li> </ul>			
	<ul> <li>Wetland has an intermittently flowing outlet</li></ul>			
	• We than has a permanently flowing surface outlet			
	D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the surface of the wetland</i>			
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest			
	<ul> <li>elevation of "permanent" water).</li> <li>Marks of ponding are at least 3 ft. above the surface points = 8 </li> </ul>			
	<ul> <li>Marks of pointing are at reast 5 if, above the surface</li></ul>			
	• Marks are 2 ft. to $< 3$ ft. from surface points = 6			
	• Marks are 1 ft. to $< 2$ ft. from surface			
	<ul> <li>Marks are 6 in. to &lt; 1 ft. from surface</li></ul>			
	Total for D 3     Add the points in the boxes above			
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)		
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland	(*** <b>-</b> /		
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood			
	storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>			
	Wetland is in a headwater of a river or stream that has flooding problems.			
	Wetland drains to a river or stream that has flooding problems	Multiplier		
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or			
	stream that has flooding problems Other			
	$\square YES multiplier is 2 \square NO multiplier is 1$			
	<b><u>TOTAL</u> – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .			
•	$\underline{101712}$ = Hydrologic Functions – Multiply the score from D5 by D4, then record score on p.1 of field form.			

R	Riverine Wetlands		
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)	
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)	
	R 1.1       Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:         • Depressions cover > 1/3 area of wetland	Figure 🗌	
	<ul> <li>Depressions cover &gt; 1/10 area of wetland</li></ul>	1	
	R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is <b>not</b> Cowardin vegetation classes):	Figure 🗌	
	<ul> <li>Forest or shrub &gt; 2/3 the area of the wetlandpoints =10</li> <li>Forest or shrub 1/3 - 2/3 area of the wetlandpoints = 5</li> <li>Ungrazed, herbaceous plants &gt; 2/3 area of wetlandpoints = 5</li> <li>Ungrazed herbaceous plants 1/3 - 2/3 area of wetlandpoints = 2</li> <li>Forest, shrub, and ungrazed herbaceous &lt; 1/3 area of wetlandpoints = 0</li> <li>Arial photo or map showing polygons of different vegetation cover</li> </ul>	5	
-	Total for R1 Add the points in the boxes above	6	
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)	
R 2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas,	(	
	<ul> <li>water hows into wetand from a stream of curvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential or urban areas are within 150 ft. of wetland</li> <li>The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards.</li> </ul>	Multiplier	
	Other $\square$ YES multiplier is 2 $\square$ NO multiplier is 1	2	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	<u>12</u>	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation.	-	
<b>R</b> 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)	
	R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream.	Figure 🗌	
	<ul> <li>If the ratio is 2 or more</li></ul>	1	
	R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub" (areas of polygons with &gt; 90% cover at person height. This is not Cowardin vegetation classes):</i>	Figure	
	• Forest or shrub for more than 2/3 the area of the wetland points = 6		
	<ul> <li>Forest or shrub for &gt; 1/3 area OR herbaceous plants &gt; 2/3 area</li></ul>	4	
	<ul> <li>Forest or shrub for &gt; 1/3 area OR herbaceous plants &gt; 2/3 area</li></ul>	4	
R 4	<ul> <li>Forest or shrub for &gt; 1/3 area OR herbaceous plants &gt; 2/3 area</li></ul>	4	
R 4	<ul> <li>Forest or shrub for &gt; 1/3 area OR herbaceous plants &gt; 2/3 area</li></ul>	4	
R 4	<ul> <li>Forest or shrub for &gt; 1/3 area OR herbaceous plants &gt; 2/3 area</li></ul>	4 5 (see p.50)	

L	Lake-fringe Wetlands	Points (only 1 score	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)	
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) wide points = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked	Figure 🛄	
	L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.	Figure 🗌	
	<ul> <li>Herbaceous plants cover &gt; 90% of the vegetated area</li></ul>		
	Total for L1Add the points in the boxes above		
L 2	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the	(see p.53)	
	<ul> <li>wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</li> <li>Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater flows into the wetland</li> <li>Tilled fields or orchards within 150 ft. of wetland</li> <li>Powerboats with gasoline or diesel engines use the lake</li> <li>Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake)</li> <li>Other</li> <li>YES multiplier is 2</li> </ul>		
•	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2.		
	<b>Record score on p.1 of field form.</b> HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.		
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)	
	L 3.1       Average width and characteristics of vegetation along the lakeshore (do not include aquatic bed): (choose the highest scoring description that matches conditions in the wetland)         • > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide       points = 6         • > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) wide       points = 4         • > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide       points = 4         • Vegetation is at least 6 ft. (2m) wide       points = 2         • Vegetation is less than 6 ft. (2m) wide       points = 0	Figure	
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)	
	<ul> <li>Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply.</li> <li>There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion.</li> <li>There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion.</li> <li>Other YES multiplier is 2 NO multiplier is 1</li> </ul>	Multiplier	
	<b><u>TOTAL</u> – Hydrologic Functions</b> Multiply the score from L3 by the multiplier L4.		
	<b>Record score on p.1 of field form.</b>		

S	S Slope Wetlands Po				
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.				
<b>S</b> 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)			
	S 1.1       Characteristics of average slope of wetland:         • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)				
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic ( <i>use NRCS definitions of soil types</i> ). <b>YES</b> = 3 points <b>NO</b> = 0 points				
	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt; 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.</li> <li>Dense, ungrazed, herbaceous vegetation &gt; 90% of the wetland unit points = 6</li> <li>Dense, ungrazed, herbaceous vegetation &gt; 1/2 of unit points = 3</li> <li>Dense, woody, vegetation &gt; 1/2 of unit points = 2</li> </ul>	Figure 🗌			
	<ul> <li>Dense, ungrazed, herbaceous vegetation &gt; 1/4 of unit points = 1</li> <li>Does not meet any of the criteria above for herbaceous vegetation points = 0</li> </ul>				
	Aerial photo or map with vegetation polygons				
	Total for S 1Add the points in the boxes above				
S 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 58)			
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other				
	YES multiplier is 2   NO multiplier is 1				
•	TOTAL - Water Quality FunctionsMultiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.				
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	1			
<b>S</b> 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.59)			
	<ul> <li>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough to remain erect during surface flows.</li> <li>Dense, uncut, rigid vegetation covers &gt; 90% of the area of the unit points = 6</li> <li>Dense, uncut, rigid vegetation&gt; 1/2 - 90% area of unit points = 3</li> <li>Dense, uncut, rigid vegetation&gt; 1/4 - 1/2 of unit points = 1</li> <li>More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0</li> </ul>				
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. <b>YES</b> = 2 points <b>NO</b> = 0 points				
	Total for S3     Add the points in the boxes above				
<b>S</b> 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61)				
	Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> Wetland has surface runoff that can cause flooding problems downgradient				
	YES multiplier is 2     NO multiplier is 1				
•	<b><u>TOTAL</u></b> – <b>Hydrologic Functions</b> Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>				

Comments: _____

Check the vegetarian classes (as defined by Cowardin) and neights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed Emergent plants >12 - 40 inches (0-30cm) high are the highest layer with > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants >10 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants >10 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants >10 - 100cm) high are the highest layer with > 30% cover Emergent plants =10 - 100cm) high are the highest layer with > 30% cover Add the number of vegetation types that qualify. If you have: 4 - 6 typespoints = 3 1 typepoints = 0 Map of Cowardin vegetation classes and areas with different heights of emergents H 1.2 Is one of the vegetation types "aquatic bed?" (see p.64) EMES = 1 point      NO = 0 points H 1.3. I boes the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands. U YES = 3 points & go to H 1.4 H 1.3. I boos the unit have an intermittent or permanent stream within its boundaries, or along one side. over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? YES = 3 points	These questions apply to wetlands of all HGM classes.		
H 1.1       Categories of Vegetation structure: Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed Emergent plants >12 – 40 inches (0-30cm) high are the highest layer with > 30% cover Emergent plants >12 – 40 inches (30 – 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (> 100cm) high are the highest layer with > 30% cover Errorsted (areas where strues have > 30% cover)       2 typespoints = 1 30% cover)         Add the number of vegetation types that qualify. If you have: 4 – 6 typespoints = 3 3 typespoints = 2 4 – 6 typespoints = 2 3 types control to the vegetation types that qualify. If you have: 4 – 6 typespoints = 2 4 – 6 typespoints = 0 3 typespoints = 3 4 typepoints = 0 4 H 1.2 Is one of the vegetation types "aquatic bed?" (see p. 64)       Figu         H 1.3       Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – carly June) OR in carly fall (August – end of September)? Note: answer YES for Lake-fringe wetlands. W YES = 3 points & go to H 1.4 H 1.3.1 is NO!?       NO = 0 points Map showing areas of open water         H 1.4       Richness of Plant Species (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted:       9 species points = 1 4 - 9 s	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		
Fig.            Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquito bed Emergent plants 0-12 inches (00-30cm) high are the highest layer and have > 30% cover Emergent plants > 12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (30 - 100cm) high are the highest layer with > 30% cover Serve/shrub (areas where strues have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 - 6 typespoints = 3 1 typepoints = 0 Map of Cowardin vegetation classes and areas with different heights of emergents H 1.2 Is one of the vegetation types "aquatic bed?" (see p. 64) [YES = 1 point  NO = 0 points H 1.3 Surface Water (see p. 65) H 1.3 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March - early June) OR in early fall (August - end of September)? Note: answer YES for Lake-fringe wetlands. YES = 3 points & go to H 1.4 H 1.3.1 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? YES = 3 points  NO = 0 points Map showing areas of open water H 1.4 Richness of Plant Species (see p. 66) 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	<b>1</b> Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)		
Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover         Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover         Scrub/shrub (areas where test have > 30% cover)         Forested (areas where test have > 30% cover)         Add the number of vegetation types that qualify. If you have:         4 - 6 typespoints = 1         3 typespoints = 2         1 typepoints = 0         Map of Cowardin vegetation classes and areas with different heights of emergents         H 1.2 Is one of the vegetation types "aquatic bed?" (see p. 64)         □       ¥ES = 1 point         NO = 0 points         H 1.3 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands.         □       YES = 3 points       NO = 0 points         H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?       YES = 3 points         H 1.4 Richness of Plant Species (see p. 66)       NO = 0 points         Map showing areas of open water       YES = 2 points         H 1.4 Richness of Plant Species (see p. 66)       No = 0 points         You do not have to name the species. Do	rian classes (as defined by Cowardin) and heights of em	shold <b>Figure</b>	
Image: Present series       Image: Present s	Ints $>12 - 40$ inches $(30 - 100$ cm) high are the highest la Ints $> 40$ inches $(>100$ cm) high are the highest layer with (areas where shrubs have $> 30\%$ cover) as where trees have $> 30\%$ cover) of vegetation types that qualify. If you have: 6 types	0 ents	
H 1.3       Surface Water (see p. 65)         H1.3.1       Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands.       Image: Note = Note: Note: Answer YES for Lake-fringe wetlands.       Image: Note = Note: Note: Note: Answer YES for Lake-fringe wetlands.       Image: Note = Note: Note: Note: Answer YES for Lake-fringe wetlands.       Image: Note = Note: Note: Note: Note: Answer YES for Lake-fringe wetlands.       Image: Note = Note: September)? Note: Answer YES for Lake-fringe wetlands.       Image: Note:		0	
September)? Note: answer YES for Lake-fringe wetlands.       NO = go to H 1.3.2         YES = 3 points & go to H 1.4       NO = go to H 1.3.2         H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?       YES = 3 points       NO = 0 points Map showing areas of open water         H 1.4       Richness of Plant Species (see p. 66)       NO = 0 points Map showing areas of open water         H 1.4       Richness of Plant Species (see p. 66)       NO = 0 points Map showing areas of open water         You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)       If you counted:         Ye species       points = 1       # of species 4         List species below if you wish:	<i>ee p. 65)</i> unit have areas of "open" water (without emergent or sl	4 Figure 🗌	
over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H         1.3.1 is NO)?       YES = 3 points         Map showing areas of open water         H 1.4       Richness of Plant Species (see p. 66)         Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold)         You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)         If you counted:       > 9 species points = 2         4 - 9 species points = 0       # of species <u>4</u> H 1.5       Interspersion of Habitats (see p. 67)         Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low,	te: answer YES for Lake-fringe wetlands.		
Map showing areas of open water         H 1.4       Richness of Plant Species (see p. 66)         Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold)         You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)         If you counted:       > 9 species points = 2         4 - 9 species points = 1       # of species <u>4</u> List species below if you wish:	acre or 10% of its area, AND that has an unvegetated bo	side, 0	
Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold)       You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)         If you counted:       > 9 species points = 2         4 - 9 species points = 0       # of species 4         K + 1.5       Interspersion of Habitats (see p. 67)         Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low,       Figure	$YES = 3 \text{ points} \qquad \qquad \boxed{X} \text{ NO} \\ \textbf{Map}$	ater	
Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low,	Species(see p. 66)r of plant species in the wetland that cover at least 10 ftpmbined to meet the size threshold)to name the species. Do not include Eurasian Milfoil, reian Olive, Phragmites, Canadian Thistle, Yellow-flag Iri> 9 species $4 - 9$ species $4 - 9$ species $4$ species	ame	
or none.	e diagrams below whether interspersion between types of	Figure 🗌	
None = 0 points Low = 1 point Moderate = 2 points None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Image: The point of the point model of the point (point of the point of the p	High = 3 points e 4 or more vegetation categories or 3 vegetation categories		

	H 1.6	Special Habitat Features (see p. 68)	
		Check the habitat features that are present in the wetland unit. The number of checks is the number of	
		points you put into the next column.	
		Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream	
		$\boxtimes$ Cattails or bulrushes are present within the unit	
		Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge	2
		Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of	3
		<ul> <li>"yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.</li> <li>□ Stable steep banks of fine material that might be used by beaver or muskrat for denning</li> </ul>	
		(> 45 degree slope) OR signs of recent beaver activity	
		Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)	
		Maximum score possible = 6	
		<b>H 1 TOTAL Score</b> – potential to provide habitat Add the scores in the column above	5
Н2			
11 4			
	H 2.1	<u>Buffers</u> (see P. 71): Choose the description that best represents condition of buffer of wetland unit. The highest scoring	Figure 🔲
		criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".	
		Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or	
		paving within undisturbed part of buffer.	
		330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water >	
		95% of circumference points = 5	
		330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water	
		> 50% circumference points = 4	
		170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference	1
		□ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water >	
		25% circumference	
		170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water for	
		> 50% circumference points = 3	
		If buffer does not meet any of the three criteria above:	
		No paved areas (except paved trails) or buildings within 80 ft (25m) of wetland	
		> 95% circumference. Light to moderate grazing or lawns are OK points = 2	
		□ No paved areas of buildings within 170 ft (50m) of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2	
		□ Heavy grazing in buffer	
		$\boxtimes$ Vegetated buffers are < 6.6 ft wide (2m) for more than 95% of the circumference	
		(e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0	
		Buffer does not meet any of the criteria above points = 1	
	H 2.2	Wet Corridors (see p. 72)	
		H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, $> 30$ ft. wide, vegetated corridor	
		at least 1/4 mile long with surface water or water flowing water throughout most of the year (>	
		9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or	
		pasture to edge of stream are considered breaks in the corridor).	
		<b>YES</b> = 4 points (go to H 2.3) <b>NO</b> = go to H 2.2.2	
		H. 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at	1
	least 1/4 mile long with water flowing seasonally, <b>OR</b> a lake-fringe wetland without a "wet"		
		corridor, <b>OR</b> a riverine wetland without a surface channel connecting to the stream? <b>YES</b> = 2 points (go to H 2.3) $\square$ <b>NO</b> = go to H 2.2.3	
		H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake ( <i>do not include man-made ditches</i> )?	
		<b>YES</b> = 1 point $\square$ <b>NO</b> = 0 points	
L			

٠	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>13</u>
	Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers.	Points will be subtracted 0
<u>H 3</u>	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	Points
	H 2 TOTAL Score – opportunity for providing habitat       Add the scores in the columns above	8
	• Does not meet any of the four criteria above	
	• There is at least 1 wetland within 1/2 mile points = 1	2
	disturbed points = $2$	2
	• There are at least 3 other wetlands within $1/2$ mile, BUT the connections between them are	
	paved roads, fill, fields, heavy boat traffic or other development	
	relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	reservoirs.) points = 5	
	(Generally, this means outside boundaries of reclamation areas, irritation district, or	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures.	
	H 2.4 Landscape: Choose the <b>one</b> description of the landscape around the wetland that best fits. (see p. 76)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)	
	If wetland has <b>2 or more</b> Priority Habitats = <b>4 points</b> If wetland has <b>1</b> Priority Habitat = <b>2 points</b>	4
	diameter at the largest end, and $> 6$ m (20 ft) long.	
	30  cm (12  in) in eastern Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in	
	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 >	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	<ul> <li>Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</li> <li>Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,</li> </ul>	
	rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	<b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	provide functional life history requirements for instream fish and wildlife resources.	
	<ul> <li>definition will be developed later in Fall 2008. (<i>check WDFW web site</i>)</li> <li>Instream: The combination of physical, biological, and chemical processes and conditions that interact to</li> </ul>	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A	
	terrestrial ecosystems which mutually influence each other.	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).	
	<b>Juniper Savannah</b> : All juniper woodlands (SE part of state only; check map)	
	oak component is important (full descriptions in WDFW PHS report p. 158).	
	snags, and quantity of large downed material is generally less than that found in old-growth. <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of	
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics	
	Old-growth/Mature forests (east of Cascade crest): ( <i>full descriptions in WDFW PHS report p. 157</i> ). Old-	
	<b>Eastside Steppe:</b> Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial bunchgrasses, or a combination of both ( <i>full description of species found here in WDFW PHS report p. 153</i> ).	
	fish and wildlife (may include urban or urban growth areas) ( <i>full descriptions in WDFW PHS report p. 152</i> ).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections to the habitats can be disturbed.</i>	
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u> ).	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW	

# CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.			
SC1	Vernal pools (see p.79)				
BCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?				
	Its only source of water is rainfall or snowmelt from a small contributing basin and has no				
	groundwater input.				
	Wetland plants are typically present only in the spring; the summer vegetation is typically upland				
	annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a				
	vernal pool.				
	The soil in the wetland are shallow (<1 ft. deep $(30 \text{ cm})$ and is underlain by an impermeable layer				
	such as basalt or clay.				
	Surface water is present for less than 120 days during the "wet" season.				
	$\square$ <b>YES</b> = Go to SC 1.1 $\square$ <b>NO</b> not a vernal pool				
	SC 1.1 Is the vernal pool relatively undisturbed in February and March?				
	<b>YES</b> = Go to SC 1.2 $\square$ <b>NO</b> = not a vernal pool with special				
	characteristics				
	SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	🗌 Cat. II			
	wetlands, rivers, lakes etc.)?	🗍 Cat. III			
	$\square \ \mathbf{YES} = Category II \qquad \qquad \square \ \mathbf{NO} = Category III$				
SC2	Alkali wetlands (see p.81)				
	Does the wetland unit meet <b>one</b> of the following two criteria?				
	The wetland has a conductivity $> 3.0 \text{ mS/cm}$ .				
	The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the				
	wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali				
	systems).				
	If the wetland is dry at the time of your field visit, the central part of the area is covered with a				
	layer of salt.				
	<b>OR</b> does the wetland meet <b>two</b> of the following three sub-criteria?				
	Salt encrustations around more than 80% of the edge of the wetland.				
	$\square$ More than 3/4 of the plant cover consists of species listed on Table 2.				
	A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands				
	may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I			
	$\square \textbf{ YES} = Category I \qquad \qquad \boxtimes \textbf{NO} - not an alkali wetland$				
SC3	Natural Heritage Wetlands (see p. 82)				
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as				
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or				
	Sensitive plant species.				
	SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?				
	(This question is used to screen out most sites before you need to contact WNHP/DNR.)				
	S/T/R information from Appendix D or accessed from WNHP/DNR web site				
	<b>YES</b> $\square$ Contact WNHP/DNR (see p. 79) and go to SC 3.2 <b>NO</b> $\square$				
	SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state				
	threatened or endangered plant species?	Cat. I			
	$\square$ <b>YES</b> = Category 1 $\square$ <b>NO</b> – not a natural heritage wetland				

~ ~ ~	<b>Bogs</b> (see p. 82)	
SC4	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to</i>	
	rate the wetland based on its functions. SC 4.1 Does the wetland 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.)	
	<b>YES</b> = go to SC 4.3 <b>NO</b> = go to SC 4.2 SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? $\square$ <b>YES</b> = go to 4.3 $\square$ <b>NO</b> = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries, 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)?	
	<b>YES</b> = Category I bog <b>NO</b> = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar,	
	western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any	
	of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> $30\%$ coverage of the total shrub/herbaceous cover)?	Cat. I
	$\square \mathbf{YES} = Category \ 1 \ bog \qquad \square \mathbf{NO}$	
SC5	<b>Forested Wetlands</b> (see p. 85)	
~~~~	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	<i>question H 1.1)</i> rooted within its boundary that meet at least one of the following three criteria? The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.) \Box There is at least 1/4 are of trace (over in webland, smaller then 2.5 area) that are "mature" or "ald	
	There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (<i>see p. 83</i>).	
	\square YES = got o SC 5.1 \square NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (<i>Thuja plicata</i>), Alaska yellow cedar	~
	(<i>Chamaecyparis nootkatensis</i>), pine spp. mostly "white" pine (Pinus monticola), western hemlock (<i>Tsuga heterophylla</i>), Englemann spruce (<i>Picea engelmannii</i>)?	Cat. I
	\square YES = Category I \square NO = go to SC 5.2	
	SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species?	Cat. I
	$\square \textbf{YES} = Category I \qquad \square \textbf{NO} = go to SC 5.3$	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast growing species? Fast growing species are: Alders – red (<i>alnus rubra</i>), thin-leaf (A. <i>tenuifolia</i>);	
	Cottonwoods – narrow-leaf (<i>Populus angustifolia</i>), black (<i>P. balsamifera</i>); Willows – peach-leaf (Salix	
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis) \Box YES = Category II \Box NO = go to SC 5.5	
	\square YES = Category II \boxtimes NO = go to SC 5.5SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	$\Box $ YES = Category II	
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories.	
	If you answered NO for all types enter "Not Applicable" on p. 1	

Wetland name or number: W	/-21
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WETLAND RATING FORM -EASTERN 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 wet	tland (if known): <u>W-21</u>					Date	e of site visit:	7/20/16
Rated	by: <u>S</u>	S. Caruana	Trained by Ecolo	ogy?	Yes	🛛 No	D	ate of training	g:
SEC:	<u>3</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 E</u>	East	Is S/T/F	R in Appen	dix D? 🗌 Ye	s 🛛 No	
		Map of wet	land unit: Figur	e <u>3</u>		Estimate	d size <u>0.01</u>		
			SUMMA	ARY OF	RATIN	G			
Categ	ory ba	ased on FUNCTIONS prov	ided by wetland:	□ I				⊠ IV	
		Category I = Score > 70		Score fo	or "Water	Quality" F	unctions	7	
		Category II = Score 51 -	69	Sc	ore for H	ydrologic F	functions	3	
		Category III = Score 30 -	50		Score fo	or Habitat F	functions	15	
		Category IV = Score < 30			TOTAL	score for F	functions	25	7
Categ	ory ba	sed on SPECIAL CHARAC	TERISTCS of We	tland:	I			Does not	Apply
		Final C	ategory (choos	e the "h	ighest" ca	ategory fro	m above")	Ι	
		Summary of	basic information	about	the wetla	nd unit.	-		
		Wetland Typ	e			d Class			
		Vernal Pool		-	essional ·				
		Alkali Natural Heritage Wo		River	rine -fringe				
		Bog		Slope	-				
		Forest				as multiple			
		None of the above			classes p	-			
Does t	If	tland being rated meet any you answer YES to any of tegulations regarding the spec	the questions below	w you w			e wetland accor	ding to the	
Ch	eck L	ist for Wetlands that Ne	ed Special and t	that ar	e Not In	cluded in	the Rating	YES	NO
SP1.	<i>Endar</i> For th	he wetland unit been docume agered animal or plant spec- be purposes of this rating sys or federal database.	ies (T/E species)?						
SP2.	<i>Endar</i> wetlar	he wetland unit been docume agered animal species? For ad is on the appropriate state tegorized as Category 1 Nat	the purposes of the database. Note:	is rating Wetland	g system, ds with St	"document tate listed p	ed" means the lant species		\boxtimes
SP3.	Does	the wetland unit contain ind	ividuals of Priority	y specie	s listed by	y the WDF	W for the state?		\boxtimes
SP4.	wetla	the wetland unit have a loca nd has been identified in the ocal management plan as hav	Shoreline Master	Progran					\boxtimes

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

We	Wetland name or number: W-21			
	Classification of Vegetated Wetlands for Eastern	Washington		
	he hydrologic criteria listed in each question do not apply to the entire unit being tiple HGM classes. In this case, identify which hydrologic criteria in questions			
1.	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 oper surface) where at least 20 acres (8 ha) in size; At least 30% of the open water area is deeper than 3 m (10 ft)? 	en water (without any vegetation on the		
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacu	strine fringe)		
2.	Does the 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 (unidirection 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 types of wetlands ex shallow depressions or behind hummocks (depressions are usually 	cept occasionally in very small and		
	\square NO – go to Step 3 \blacksquare YES – The wetland class is Slope			
3.	Is the wetland unit in a valley or stream channel where it gets inundated by ove In general, the flooding should occur at least once every ten years to answer "ye that are filled with water when the river is not flooding.			
	\square NO – go to Step 4 \square YES – The wetland class is Riverine			
4.	Is the wetland unit in a topographic depression, outside areas that are inundated ponds, or is saturated to the surface, at some time of the year. <i>This means that interior of the wetland.</i>			
	\square NO – go to Step 5 \square YES – The wetland class is Depressional			
5.	5. 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.			
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating		
	Slope + Riverine	Riverine		
	Slope + Depressional	Depressional		
	Slope + Lake-fringe	Lake-fringe		
	Depressional + Riverine (riverine is within boundary of depression) Depressional + Lake-fringe	Depressional Depressional		
		P. • • • • • • • • • • • • • • • • • •		

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outlet	
	• Wetland has a highly constricted permanently flowing outlet	
	Wetland has a permanently flowing surface outlet	
	YES points = 3 NO points = 0	
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 	Figure 🗌
	• Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of area points = 3	
	 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	
	• Area seasonally ponded is 1/4 to 1/2 total area of wetlandpoints = 1	
	• Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation/flooding	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?	
D 2	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</i>	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, reads, or clear out logging	Multiplier
	fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft. of wetland	Wumpher
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	
	$\square YES multiplier is 2 \square NO multiplier is 1$	
٠	TOTAL – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion.	
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
	D 3.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outlet	
	• Wetland has a highly constricted permanently flowing outlet points = 4	
	• Wetland has a permanently flowing surface outlet	
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest	
	 elevation of "permanent" water). Marks of ponding are at least 3 ft. above the surface points = 8 	
	• The wetland is a "headwater" wetland (see p. 39)	
	• Marks are 2 ft. to < 3 ft. from surface	
	 Marks are 1 ft. to < 2 ft. from surface	
	• No marks above 6 in. or wetland has only saturated soils	
	Total for D 3Add the points in the boxes above	
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood	
	storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources	
	from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> Use Wetland is in a headwater of a river or stream that has flooding problems.	
	Wetland drains to a river or stream that has flooding problems	Multiplier
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	
	Other	
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	 R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 1/3 area of wetland	Figure 🗌
	 Depressions cover > 1/10 area of wetland	
	 R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub > 2/3 the area of the wetlandpoints =10 	Figure 🗌
	 Forest or shrub 1/3 – 2/3 area of the wetlandpoints = 5 Ungrazed, herbaceous plants > 2/3 area of wetlandpoints = 5 Ungrazed herbaceous plants 1/3 – 2/3 area of wetlandpoints = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetlandpoints = 0 Arial photo or map showing polygons of different vegetation cover 	
	Total for R1Add the points in the boxes above	
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland	
	 Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. Other YES multiplier is 2 NO multiplier is 1 	Multiplier
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.	
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
	R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is between 1 and < 2. points = 8 • If the ratio is 1/2 to < 1. points = 4 • If the ratio is 1/4 to < 1/2. points = 2 • If the ratio is < 1/4. points = 1	Figure 🗌
	 R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub"</i> (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub for more than 2/3 the area of the wetland	Figure 🗌
	Total for R3Add the points in the boxes above	
R 4	Does the wetland have the opportunity to reduce flooding and erosion? Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other Other	(see p.50) Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from R3 by the multiplier in R4. <i>Record score on p.1 of field form.</i>	

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	 L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33 ft. (10m) wide points = 6 Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked 	Figure <u> </u>
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure 🗌
	 Herbaceous plants cover > 2/3 of the vegetated area points = 4 Herbaceous plants cover > 1/3 of the vegetated area points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed cover > 2/3 of the vegetated area points = 0 Map with polygons of different vegetation types 	
	Total for L1Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p.53)
	Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2 NO multiplier is 1	Multiplier
	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2.	
-	Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	(54)
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion? L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>):	(see p.54)
	 1 5.1 Average with and characteristics of vegetation and only in takes in the welland) > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide	Figure <u> </u>
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1	Multiplier
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from L3 by the multiplier L4.	
•	Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	S 1.1 Characteristics of average slope of wetland: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	1
	Slope is 5% or greaterpoints = 0 S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (use NRCS definitions of soil types). YES = 3 points NO = 0 points	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	Figure <u> </u>
	 Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons 	6
	Total for S 1Add the points in the boxes above	7
S 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 58)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier
•	TOTAL – Water Quality Functions Multiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.	7
	HYDROLOGIC FUNCTIONS – Indicators that wetland 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.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	0
	Total for S3Add the points in the boxes above	3
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61)	
	Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>	Multiplier
	Wetland has surface runoff that can cause flooding problems downgradient Other YES multiplier is 2	1
	TOTAL – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	3
-	1 $\frac{1}{100000}$ = $100000000000000000000000000000000000$	<u> </u>

Comments: _____

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetatian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed 	Figure 🗌
	 Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants > 12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 1 type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents 	2
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	0
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands. Image: Surface Water (See P. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands. Image: Surface Water (See P. 65)	Figure 🗌
		0
	YES = 3 pointsNO = 0 pointsMap showing areas of open water	
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species 4 - 9 species < 4 species List species below if you wish:	1
	H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Figure 🗌
	None = 0 points Low = 1 point Low = 1 point Moderate = 2 points Moderate = 2 points (riparian braided channels] Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high".	1

	 H 1.6 <u>Special Habitat Features</u> (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. □ Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream □ Cattails or bulrushes are present within the unit □ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of th edge □ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity □ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	
	H 1 TOTAL Score – potential to provide habitatAdd the scores in the column above	e 5
Н2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 71): 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 Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	or 5 4 4 3 3 3 3 2 2 2 1 0
	 H 2.2 Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). □ YES = 4 points (go to H 2.3) M NO = go to H 2.2.2 H. 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? □ YES = 2 points (go to H 2.3) M NO = go to H 2.2.3 H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? □ YES = 1 point □ NO = 0 points 	

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>15</u>
	Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers.	Points will be subtracted 0
H 3	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	D :
	H 2 TOTAL Score – opportunity for providing habitatAdd the scores in the columns above	10
	 There is at least 1 wetland within 1/2 mile points = 1 Does not meet any of the four criteria above	2
	 lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development	_
	 The wetland unit is in an area where annual rainfail is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (<i>Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs.</i>)	
	 H 2.4 <u>Landscape</u>: Choose the one description of the landscape around the wetland that best fits. (see p. 76) The wetland unit is in an area where annual rainfall is less than 12 inches, and its water 	
	If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority 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 H 2.4)	4
	 Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A definition will be developed later in Fall 2008. (check WDFW web site) 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. 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 > 30 cm (12 in) in eastern 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. 	
	 growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover). 	
	 Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections to the habitats can be disturbed.</i> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (may include urban or urban growth areas) (full descriptions in WDFW PHS report p. 152). Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial bunchgrasses, or a combination of both (full description of species found here in WDFW PHS report p. 153). Old-growth/Mature forests (east of Cascade crest): (full descriptions in WDFW PHS report p. 157). Old- 	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).</i>	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.
	SC1	Vernal pools (see p.79)	
•	SCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?	
		Its only source of water is rainfall or snowmelt from a small contributing basin and has no	
		groundwater input.	
		Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
		annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a	
		vernal pool.	
		The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer	
		such as basalt or clay.	
		Surface water is present for less than 120 days during the "wet" season.	
		YES = Go to SC 1.1 \square NO not a vernal pool	
-		SC 1.1 Is the vernal pool relatively undisturbed in February and March?	
		$\Box $ YES = Go to SC 1.2 NO = not a vernal pool with special	
		characteristics	
		SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	🗌 Cat. II
		wetlands, rivers, lakes etc.)?	Cat. III
		$\square \ \mathbf{YES} = Category \ II \qquad \qquad \blacksquare \ \mathbf{NO} = Category \ III$	
	SC2	Alkali wetlands (see p.81)	
		Does the wetland unit meet one of the following two criteria?	
		The wetland has a conductivity $> 3.0 \text{ mS/cm}$.	
		The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the	
		wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali	
		systems).	
		If the wetland is dry at the time of your field visit, the central part of the area is covered with a	
		layer of salt.	
		OR does the wetland meet two of the following three sub-criteria?	
		Salt encrustations around more than 80% of the edge of the wetland.	
		\Box More than 3/4 of the plant cover consists of species listed on Table 2.	
		A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	
		may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
		\square YES = Category I \square NO – not an alkali wetland	
	SC3	Natural Heritage Wetlands (see p. 82)	
ľ		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
		SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?	
		(This question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square	
		SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state	
		threatened or endangered plant species?	C <u>at.</u> I
		\square YES = Category 1 \square NO – not a natural heritage wetland	

SC4	<u>Bogs</u> (see p. 82)	
501	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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.)	
	$\square YES = go to SC 4.3 \qquad \square NO = go to SC 4.2$	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \Box YES = go to 4.3 \blacksquare NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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 = Category I bog \square NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	C <u>at.</u> I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	
	\Box YES = Category 1 bog \boxtimes NO	
SC5	Forested Wetlands (see p. 85)	
BCS	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	question H 1.1) rooted within its boundary that meet at least one of the following three criteria?	
	The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	\boxtimes There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	YES = got o SC 5.1 NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (Thuja plicata), Alaska yellow cedar	
	(Chamaecyparis nootkatensis), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I
	(<i>Tsuga heterophylla</i>), Englemann spruce (<i>Picea engelmannii</i>)?	\boxtimes
	\boxtimes YES = Category I \square NO = go to SC 5.2	
	SC 5.2 Does the unit have areas where aspen (Populus tremuloides) as a dominant or co-dominant species?	Cat. I
	\square YES = Category I \square NO = go to SC 5.3	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (<i>alnus rubra</i>), thin-leaf (A. <i>tenuifolia</i>);	
	Cottonwoods – narrow-leaf (<i>Populus angustifolia</i>), black (<i>P. balsamifera</i>); Willows – peach-leaf (Salix	
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis)	
	$\square \textbf{ YES} = Category II \qquad \qquad \square \textbf{ NO} = go to SC 5.5$	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	\square YES = Category II	
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	
	If you answered NO for all types enter "Not Applicable" on p. 1	т
1	in you answered NO for an types enter Not Applicable on p. 1	1

Wetland name or number: W-a____

WETLAND RATING FORM -EASTERN 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 w	vetland (if known): <u>W-a</u>					Date	of site visit:	7/20/16
Rated	by:	<u>S. Caruana</u> T	rained by Ecolo	gy?]Yes	🛾 No	D	ate of training	g:
SEC:	<u>2</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 E</u>	East_	Is S/T/H	R in Appen	dix D? 🗌 Yes	s 🛛 No	
		Map of wetla	nd unit: Figuro	e <u>4</u>		Estimate	d size <u>0.03</u>		
			SUMMA	RV OF	RATIN	G			
Cate	orv	based on FUNCTIONS provide							
Curre	, 01 y								_
		Category I = Score > 70		Score fo	or "Water	· Quality" H	Junctions	7	
		Category II = Score 51 - 69		Sc	ore for H	ydrologic H	Functions	2	
		Category III = Score 30 - 50			Score fo	or Habitat H	Functions	23	
		Category IV = Score < 30			TOTAL	score for H	runctions	32	1
Categ	ory l	based on SPECIAL CHARACTE	 RISTCS of Wet	tland:	ΠI			🛛 Does not	Apply
		Final Cat	egory (choos	e the "h	ighest" c	ategory fro	m above")	III	٦
		Summary of bas							
		Wetland Type		about		d Class			
		Vernal Pool		Depr	essional				
		Alkali		River					
		Natural Heritage Wetla	ind 🗌		-fringe				
		Bog		Slope					
		Forest				as multiple			
		None of the above		HGM	l classes p	bresent			
Does		vetland being rated meet any of If you answer YES to any of the regulations regarding the special	questions below	w you w			e wetland accord	ding to the	
Cł		List for Wetlands that Need					the Rating	YES	NO
		the wetland unit been document							
	End	langered animal or plant species	(T/E species)?	·	·				\boxtimes
	For	the purposes of this rating system	n, "documented	" means	s the wetl	and is on th	ne appropriate		
		e or federal database.							
SP2.		the wetland unit been document angered animal species? For the							\boxtimes
		land is on the appropriate state da							
SP3.		categorized as Category 1 Natura as the wetland unit contain individ	-						\square
	Doe wet	es the wetland unit contain thatva tes the wetland unit have a local st land has been identified in the Sh local management plan as having	gnificance in ad oreline Master	<i>ddition</i> Progran	to its fund	ctions? For	example, the		

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number: W-a____

Classification of Vegetated Wetlands for Eastern Washington

	If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with				
mul	ltiple HGM classes. In this case, identify which hydrologic criteria in a	questions 1-7 apply, and go to Question 8.			
1.	Does the entire wetland unit meet both of the following criteria?				
	The vegetated part of the wetland is on the shores of a be surface) where at least 20 acres (8 ha) in size;	ody of open water (without any vegetation on the			
	At least 30% of the open water area is deeper than 3 m (10 ft)?			
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fri	nge (lacustrine fringe)			
2.	Does the 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 (un flow subsurface, as sheetflow, or in a swale without dist. The water leaves the wetland without being impounded NOTE: Surface water does not pond in these types of we shallow depressions or behind hummocks (depressions and state). 	nct banks. l? etlands except occasionally in very small and			
	\square NO – go to Step 3 \blacksquare YES – The wetland class is Slope				
3.	Is the wetland unit in a valley or stream channel where it gets inundat In general, the flooding should occur at least once every ten years to a that are filled with water when the river is not flooding. □ NO – go to Step 4 YES – The wetland class is Riverine	answer "yes". The wetland can contain depressions			
4.	Is the wetland unit in a topographic depression, outside areas that are ponds, or is saturated to the surface, at some time of the year. <i>This miniterior of the wetland</i> .				
	\square NO – go to Step 5 \square YES – The wetland class is Depressi	onal			
5.	Your wetland unit seems to be difficult to classify and probably contaseeps at the base of a slope may grade into a riverine floodplain, or a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT following table to identify the appropriate class to use for the rating s within your wetland. NOTE: Use this table only if the class that is remore of the total area of the wetland unit being rated. If the area of the unit, classify the wetland using the class that represents more than 900	small stream within a depressional wetland has a H OF THE HYDROLOGIC REGIMES DESCRIBED Γ (make a rough sketch to help you decide). Use the ystem if you have several HGM classes present commended in the second column represents 10% or he class listed in column 2 is less than 10% of the			
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating			
	Slope + Riverine	Riverine			
	Slope + Depressional	Depressional			
	Slope + Lake-fringe	Lake-fringe			
	Depressional + Riverine (riverine is within boundary of depression	· · ·			
	Depressional + Lake-fringe	Depressional			

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outletpoints = 5 Wetland has an intermittently flowing outletpoints = 3 	1
	• Wetland has a highly constricted permanently flowing outlet	1
	Wetland has a permanently flowing surface outlet	
	YES points = 3 \square NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure 🗌
	 Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of area points = 3 	
	• Wetland has persistent, ungrazed vegetation from $1/10$ to $< 1/3$ of areapoints = 1	
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	5
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	rigure 🛄
	• Area seasonally ponded is $1/4$ to $1/2$ total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation/flooding	1
	Total for D 1 Add the points in the boxes above	7
D 2		
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	 Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland 	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	Multiglian
	fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	1
	Other YES multiplier is 2 NO multiplier is 1	1
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>	7
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
	 D 3.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet	
	• Wetland has an intermittently flowing outlet	0
	• Wetland has a highly constricted permanently flowing outlet	0
	 Wetland has a permanently flowing surface outletpoints = 0 X D 3.2 Depth of storage during wet periods. <i>Estimate the height of ponding above the surface of the wetland</i> 	
1	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest	
	 elevation of "permanent" water). Marks of ponding are at least 3 ft. above the surface points = 8 	
	• The wetland is a "headwater" wetland (see p. 39) points = 6	2
	 Marks are 2 ft. to < 3 ft. from surface	-
	• Marks are 6 in, to < 1 ft, from surface	
	• No marks above 6 in. or wetland has only saturated soilspoints = 0	
	Total for D 3Add the points in the boxes above	
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood	
1	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> Use that has flooding problems.	
1	Wetland drains to a river or stream that has flooding problems	Multiplier
1	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	
1	Other	1
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	2

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	 R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 1/3 area of wetland	Figure 🗌
	 No depressions present	Figure <u> </u>
	Total for R1 Add the points in the boxes above	
R 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area	(see p. 46)
	 Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. Other YES multiplier is 2 NO multiplier is 1 	Multiplier
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.	
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
	 R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. If the ratio is 2 or more	Figure <u> </u>
	 R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub"</i> (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub for more than 2/3 the area of the wetland	Figure 🗌
	Total for R3Add the points in the boxes above	
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding	(see p.50) Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from R3 by the multiplier in R4. <i>Record score on p.1 of field form.</i>	

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) wide points = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked	Figure 🗌
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure <u> </u>
	 Herbaceous plants cover > 2/3 of the vegetated area	
	Total for L1Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p.53)
	Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2 NO multiplier is 1	Multiplier
	TOTAL – Water Quality Functions Multiple is 1	
•	Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (choose the highest scoring description that matches conditions in the wetland) • > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide points = 6 • > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) wide. points = 4 • > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide. points = 4 • Vegetation is at least 6 ft. (2m) wide. points = 2 • Vegetation is less than 6 ft. (2m) wide. points = 0 Aerial photo or map with Cowardin vegetation classes	Figure <u> </u>
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1	Multiplier
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from L3 by the multiplier L4.	
L	Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	
	 Slope is 5% or greaterpoints = 0 S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points 	
	 S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 	Figure 🗌
	 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons 	
	Total for S 1Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	(see p. 58)
	Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier
٠	TOTAL– Water Quality FunctionsMultiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	Does the wetland unit have the potential to reduce flooding and stream erosion?	(see p.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	
	Total for S3Add the points in the boxes above	
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland has surface runoff that can cause flooding problems downgradient	Multiplier
-	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	

Comments: _____

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetatian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed 	Figure 🗌
	Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants >40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 types 3 types map of Cowardin vegetation classes and areas with different heights of emergents	0
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	1
	\bigvee YES = 1 point \square NO = 0 pointsH 1.3Surface Water (see p. 65)H1.3.1Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4	Figure 🗌
	acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? <i>Note: answer YES for Lake-fringe wetlands.</i> VES = 3 points & go to H 1.4 NO = go to H 1.3.2	
	H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?	3
	$\square YES = 3 \text{ points}$ $\square NO = 0 \text{ points}$ $\square Map showing areas of open water$	
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species points = 2 4 - 9 species points = 1 < 4 species below if you wish: # of species 5	1
	H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Figure 🗌
	None = 0 points Nome = 0 points Low = 1 point Low = 1 point Moderate = 2 points Moderate = 2 points (riparian braided channels] Moderate = 2 points (riparian braided channels] Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high". Use maps from H 1.1 and H 1.3	1

	 H 1.6 Special Habitat Features (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. □ Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream □ Cattails or bulrushes are present within the unit □ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge □ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity □ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, 	
	herbaceous, moss/ground cover) Maximum score possible = 6	
	H 1 TOTAL Score – potential to provide habitat Add the scores in the column above	? 7
Н2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 71): 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 Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	Figure r
	 H 2.2 Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). M YES = 4 points (go to H 2.3) H. 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? M YES = 2 points (go to H 2.3) H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? M YES = 1 point NO = 0 points 	

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>23</u>
	H 3.1 Indicator of reduced habitat functions (see p. 75) Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. Image: Control of the presence of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. Image: Control of the presence of	Points will be subtracted 0
Н3		
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	16
	 There is at least 1 wetland within 1/2 mile points = 1 Does not meet any of the four criteria above points = 0 	5
	disturbed	5
	 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development	
	relatively undisturbed (light grazing in the connection or an open water connection along a	
	 reservoirs.) points = 5 There are at least 3 other wetlands within 1/2 mile, and the connections between them are 	
	regime is not influenced by irrigation practices, dams, or water control structures. (Generally, this means outside boundaries of reclamation areas, irritation district, or	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures	
	H 2.4 Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)	
	If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points	4
	diameter at the largest end, and > 6 m (20 ft) long.	
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > $30 \text{ cm} (12 \text{ in})$ in eastern Washington and are > $2 \text{ m} (6.5 \text{ ft})$ in height. Priority logs are > $30 \text{ cm} (12 \text{ in})$ in	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay	
	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.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
	provide functional life history requirements for instream fish and wildlife resources.	
	definition will be developed later in Fall 2008. (check WDFW web site)	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
	conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).	
	 Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a 	
	oak component is important (full descriptions in WDFW PHS report p. 158).	
	snags, and quantity of large downed material is generally less than that found in old-growth. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	due to the influence of fire, climate, and soils. Mature: Stands 80 - 160 yrs old. Decay, decadence, numbers of	
	Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old- growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics	
	bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>).	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial	
	Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>).	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections to the habitats can be disturbed.</i>	
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ia aro mot
		iu ure mei.
SC1	Is the wetland unit less than 4,000 ft^2 , and does it meet at least two of the following criteria?	
	☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no	
	groundwater input.	
	Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
	annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a	
	vernal pool.	
	The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer	
	such as basalt or clay.	
	Surface water is present for less than 120 days during the "wet" season.	
	YES = Go to SC 1.1 NO not a vernal pool	
	SC 1.1 Is the vernal pool relatively undisturbed in February and March?	
	YES = Go to SC 1.2 I NO = not a vernal pool with special	
	characteristics	
	SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	
	wetlands, rivers, lakes etc.)?	🗌 Cat. II
	$\square YES = Category II \qquad \square NO = Category III$	🗌 Cat. III
SC2	<u>Alkali wetlands</u> (see p.81)	
	Does the wetland unit meet one of the following two criteria?	
	The wetland has a conductivity $> 3.0 \text{ mS/cm}$.	
	The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the	
	wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali	
	systems).	
	If the wetland is dry at the time of your field visit, the central part of the area is covered with a	
	layer of salt.	
	OR does the wetland meet two of the following three sub-criteria?	
	Salt encrustations around more than 80% of the edge of the wetland.	
	More than 3/4 of the plant cover consists of species listed on Table 2.	
	A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	
	may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
	\square YES = Category I \square NO – not an alkali wetland	
SC3	Natural Heritage Wetlands (see p. 82)	
505	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?	
	(This question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D \Box or accessed from WNHP/DNR web site \Box	
	YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \boxtimes	
	SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state	
		Cat. I
	threatened or endangered plant species?	
1	\square YES = Category 1 \square NO – not a natural heritage wetland	

aat	Bogs (see p. 82)	
SC4	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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.)	
	$\square YES = go to SC 4.3 \qquad \square NO = go to SC 4.2$	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \Box YES = go to 4.3 \Box NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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)?	
	\square YES = Category I bog \square NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	C <u>at.</u> I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	
	\Box YES = Category 1 bog \Box NO	
SC5	Forested Wetlands (see p. 85)	
505	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	question H 1.1) rooted within its boundary that meet at least one of the following three criteria?	
	☐ The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	YES = got o SC 5.1 ID NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (<i>Thuja plicata</i>), Alaska yellow cedar	
	(<i>Chamaecyparis nootkatensis</i>), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I
	(Tsuga heterophylla), Englemann spruce (Picea engelmannii)?	
	$\Box \ \mathbf{YES} = Category \ \mathbf{I} \qquad \Box \ \mathbf{NO} = go \ to \ SC \ 5.2$	
	SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species?	Cat. I
	YES = Category I I O = go to SC 5.3	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders - red (alnus rubra), thin-leaf (A. tenuifolia);	
	Cottonwoods - narrow-leaf (Populus angustifolia), black (P. balsamifera); Willows - peach-leaf (Salix	
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis)	
	YES = Category II II NO = go to SC 5.5	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	$\Box YES = Category II$	
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	
	If you answered NO for all types enter "Not Applicable" on p. 1	<u>II</u>

Wetland na	me or numbe	er: W-RW-1
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WETLAND RATING FORM –EASTERN 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 wetl	and (if known): <u>W-RW-1</u>					Date	e of site visit:	7/19/16
Rated	by: <u>S.</u>	Caruana	Trained by Ecolo	ogy?	Yes	🛛 No	D	ate of training	g:
SEC:	<u>3</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10</u>	<u>East</u>	Is S/T/I	R in Appen	dix D? 🗌 Yes	s 🖾 No	
		Map of wetla	nd unit: Figure	<u>4</u>		Estimated	size <u>0.04ac</u>		
			SUMMA	ARY OF	RATIN	G			
Categ	ory bas	ed on FUNCTIONS provi		_		🗌 II		IV	
		Category I = Score > 70		Score f	or "Water	r Quality" H	Functions	9	
		Category II = Score 51 - 6	59	Sc	ore for H	ydrologic H	unctions	6	
	C	Category III = Score 30 - 5	50		Score fo	or Habitat H	unctions	17	
	C	Category IV = Score < 30			TOTAL	score for H	functions	32	7
Catego	ory base	ed on SPECIAL CHARACT	TERISTCS of We	etland:	Π			Does not	Apply
		Final Ca	ategory (choos	se the "h	nighest" c	ategory fro	m above")	II	7
		Summary of b	asic information	1 about	the wetla	nd unit.	_		
		Wetland Type				nd Class			
		Vernal Pool		Depr Rive	essional				
		Alkali Natural Heritage We	tland		-fringe				
		Bog		Slope					
		Forest		-		nas multiple			
		None of the above			I classes p	-			
Does t	If	land being rated meet any you answer YES to any of t gulations regarding the spec	he questions belo	w you w			e wetland accor	ding to the	
Ch	eck Li	st for Wetlands that Ne	ed Special and	that ar	e Not In	cluded in	the Rating	YES	NO
	Endang For the	e wetland unit been docume gered animal or plant speci purposes of this rating syst federal database.	es (T/E species)?						\boxtimes
	Endang wetland	e wetland unit been docume gered animal species? For d is on the appropriate state egorized as Category 1 Natu	the purposes of th database. Note:	nis rating Wetlan	g system, ds with S	"document tate listed p	ed" means the lant species		\boxtimes
		he wetland unit contain indi							\boxtimes
	wetland	ne wetland unit have a local d has been identified in the cal management plan as hav	Shoreline Master	Program					\boxtimes

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wet	Wetland name or number: W-RW-1			
	Classification of Vegetated Wetlands for Eastern	Washington		
	he hydrologic criteria listed in each question do not apply to the entire unit being tiple HGM classes. In this case, identify which hydrologic criteria in questions			
1.	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 ope surface) where at least 20 acres (8 ha) in size; At least 30% of the open water area is deeper than 3 m (10 ft)? 	en water (without any vegetation on the		
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacus	strine fringe)		
2.	Does the 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 (unidirection 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 types of wetlands ex shallow depressions or behind hummocks (depressions are usually 	cept occasionally in very small and		
	$\square \text{ NO} - \text{go to Step 3} \qquad \boxtimes \text{ YES} - \text{The wetland class is Slope}$			
3.	3. Is the wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes". <i>The wetland can contain depressions that are filled with water when the river is not flooding</i> .			
	\square NO – go to Step 4 \square YES – The wetland class is Riverine			
4.	Is the wetland unit in a topographic depression, outside areas that are inundated ponds, or is saturated to the surface, at some time of the year. <i>This means that interior of the wetland</i> .			
	\square NO – go to Step 5 \square YES – The wetland class is Depressional			
5.	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.			
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating		
	Slope + Riverine	Riverine		
	Slope + Depressional	Depressional		
	Slope + Lake-fringe	Lake-fringe		
	Depressional + Riverine (riverine is within boundary of depression)	Depressional		
	Depressional + Lake-fringe	Depressional		

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outlet	
	 Wetland has a highly constricted permanently flowing outlet	
	• Wetland has a permanently flowing surface outletpoints = 1	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). YES points = 3 NO points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation for $> = 2/3$ of area points = 5	Figure 🗌
	• Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of areapoints = 3	
	 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	
	 Area seasonally ponded is 1/2 total area of wetland	
	• Area seasonally ponded is $< 1/4$ total area of wetland	
	NOTE: See text for indicators of seasonal and permanent inundation/flooding	
	Total for D 1Add the points in the boxes above	
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?	
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	
	Other	
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
	D 3.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outletpoints = 8 Wetland has an intermittently flowing outletpoints - 4 	
	• Wetland has a highly constricted permanently flowing outlet points = 4	
	• Wetland has a permanently flowing surface outlet	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland	
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water).	
	• Marks of ponding are at least 3 ft, above the surface	
	• The wetland is a "headwater" wetland (see p. 39) points = 6	
	 Marks are 2 ft. to < 3 ft. from surface	
	• Marks are 6 in. to < 1 ft. from surface	
	• No marks above 6 in. or wetland has only saturated soils $\hat{points} = 0$	l
	Total for D 3Add the points in the boxes above	
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland	
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources	
	from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems.	My-141-11
	 Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or 	Multiplier
	stream that has flooding problems	
	Other	
	YES multiplier is 2 INO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 1/3 area of wetland	Figure 🗌
	 Depressions cover > 1/10 area of wetland	
	 No depressions present	Figure 🗌
	 Forest or shrub 1/3 – 2/3 area of the wetlandpoints = 5 Ungrazed, herbaceous plants > 2/3 area of wetlandpoints = 5 Ungrazed herbaceous plants 1/3 – 2/3 area of wetlandpoints = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetlandpoints = 0 Arial photo or map showing polygons of different vegetation cover 	
	Total for R1Add the points in the boxes above	
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	 Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. Other 	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.	
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
	 R 3.1 Amount overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream.</i> If the ratio is 2 or more	Figure <u> </u>
	Aerial photo or map showing average widths	
	 R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes):</i> Forest or shrub for more than 2/3 the area of the wetland	Figure 🗌
	Aerial photo or map showing polygons of different vegetation types	
	Total for R3 Add the points in the boxes above	
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p.50)
	Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other	Multiplier
	YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from R3 by the multiplier in R4.	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from R3 by the multiplier in R4. <i>Record score on p.1 of field form.</i>	

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) widepoints = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft widepoints = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft widepoints = 1 Map of Cowardin classes with widths marked	Figure <u> </u>
	L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.	Figure 🗌
	 Herbaceous plants cover > 90% of the vegetated area	
	Total for L1Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the	(see p.53)
	wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2	Multiplier
•	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2.Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (choose the highest scoring description that matches conditions in the wetland) • > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 6 • > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) widepoints = 4 • > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 4 • Vegetation is at least 6 ft. (2m) widepoints = 2 • Vegetation is less than 6 ft. (2m) widepoints = 0 Aerial photo or map with Cowardin vegetation classes	Figure 🗌
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	 Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 	Multiplier
	TOTAL – Hydrologic Functions Multiplet is 1	
•	Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	S 1.1 Characteristics of average slope of wetland: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	0
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	3
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	Figure 🗌
	 Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons 	6
	Total for S 1Add the points in the boxes above	9
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 58)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier 1
•	TOTAL – Water Quality Functions Multiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.	9
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
62	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.59)
S 3	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: <i>Choose the points</i>	(see p.59)
	 appropriate for the description that feduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	6
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	0
	Total for S3Add the points in the boxes above	6
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61)	
	Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply</i> . Wetland has surface runoff that can cause flooding problems downgradient Other	Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	<u>6</u>

Thes	e questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. □ Aquatic bed 	Figure 🗌
	Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 I type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	1
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$) YES = 1 point NO = 0 points	0
	H 1.3 <u>Surface Water</u> (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4	Figure 🗌
	acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? <i>Note: answer YES for Lake-fringe wetlands.</i> YES = 3 points & go to H 1.4 NO = go to H 1.3.2	
	H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? YES = 3 points NO = 0 points	0
	Map showing areas of open water	
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species points = 2 4 - 9 species points = 1 < 4 species below if you wish: # of species 3	0
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🗌
	None = 0 points Low = 1 point Moderate = 2 points None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Figh = 3 points [riparian braided channels] Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high".	1

	 H 1.6 <u>Special Habitat Features</u> (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number points you put into the next column. □ Loose rocks larger than 4" <u>or</u> large, downed, woody debris (> 4 in. diameter) within the area surface ponding or in stream □ Cattails or bulrushes are present within the unit □ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) edge □ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity □ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrue) 	of of the of	1
	herbaceous, moss/ground cover) Maximum score possibl		
	H 1 TOTAL Score – potential to provide habitat Add the scores in the column	i above	3
Н2			(only 1 score per box)
	H 2.1 Buffers (see P. 71): Choose the description that best represents condition of buffer of wetland unit. The highest scori criterion that applies to the wetland is to be used in the rating. See text for definition of "undistur Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no struct paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	urbed". tures or nts = 5 nts = 4 nts = 4 nts = 3 nts = 3 nts = 2 nts = 2 nts = 1 nts = 0	Figure
	 H 2.2 Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated con at least 1/4 mile long with surface water or water flowing water throughout most of the y 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stree pasture to edge of stream 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 unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "corridor, OR a riverine wetland without a surface channel connecting to the stream? ∑ YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (do not include man-made ditches)? ∑ YES = 1 point NO = 0 points 	year (> eam, or or, at wet"	5

٠	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>14</u>
	Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. Image: Second sec	vill be subtracted
<u>H 3</u>	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	Points
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	17
	• Does not meet any of the four criteria above	
	• There is at least 1 wetland within 1/2 mile points = 1	2
	disturbed points = 2 \boxtimes	-
	 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development	
	relatively undisturbed (light grazing in the connection or an open water connection along a	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	(Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs.)	
	regime is not influenced by irrigation practices, dams, or water control structures.	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water	
	H 2.4 Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)	
	If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points	4
	diameter at the largest end, and > 6 m (20 ft) long.	
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > $30 \text{ cm} (12 \text{ in})$ in eastern Washington and are > $2 \text{ m} (6.5 \text{ ft})$ in height. Priority logs are > $30 \text{ cm} (12 \text{ in})$ in	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay	
	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.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
	provide functional life history requirements for instream fish and wildlife resources.	
	Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A definition will be developed later in Fall 2008. (<i>check WDFW web site</i>)	
	terrestrial ecosystems which mutually influence each other.	
	 conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and 	
	Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
	snags, and quantity of large downed material is generally less than that found in old-growth.	
	due to the influence of fire, climate, and soils. Mature: Stands $80 - 160$ yrs old. Decay, decadence, numbers of	
	Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old- growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics	
	bunchgrasses, or a combination of both (full description of species found here in WDFW PHS report p. 153).	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial	
	Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>).	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections to the habitats can be disturbed.</i>	
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are m			
S	C1	Vernal pools (see p.79)		
	~-	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?		
		☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no		
		groundwater input.		
		Wetland plants are typically present only in the spring; the summer vegetation is typically upland		
		annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a		
		vernal pool.		
		The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer		
		such as basalt or clay.		
		Surface water is present for less than 120 days during the "wet" season.		
		$\Box \ \mathbf{YES} = \text{Go to SC } 1.1 \qquad \qquad \textbf{NO not a vernal pool}$		
		SC 1.1 Is the vernal pool relatively undisturbed in February and March?		
		\square YES = Go to SC 1.2 \square NO = not a vernal pool with special		
		characteristics		
-		SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other		
		wetlands, rivers, lakes etc.)?	🗌 Cat. II	
		$\square \ \mathbf{YES} = \text{Category II} \qquad \square \ \mathbf{NO} = \text{Category III}$	🗌 Cat. III	
S	C2	Alkali wetlands (see p.81)		
		Does the wetland unit meet one of the following two criteria?		
		The wetland has a conductivity $> 3.0 \text{ mS/cm}$.		
		The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the		
		wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali		
		systems).		
		If the wetland is dry at the time of your field visit, the central part of the area is covered with a		
		layer of salt.		
		OR does the wetland meet two of the following three sub-criteria?		
		Salt encrustations around more than 80% of the edge of the wetland.		
		More than $3/4$ of the plant cover consists of species listed on Table 2.		
		A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands		
		may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	C-4 I	
		$\square YES = Category I \qquad \qquad \square NO - not an alkali wetland$	Cat. I	
S	C3	Natural Heritage Wetlands (see p. 82)		
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as		
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or		
		Sensitive plant species.		
		SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?		
		(This question is used to screen out most sites before you need to contact WNHP/DNR.)		
		S/T/R information from Appendix D or accessed from WNHP/DNR web site		
		YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square		
		SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state		
1		threatened or endangered plant species?	Cat. I	
1		YES = Category 1 \square NO – not a natural heritage wetland		

SC4	 Bogs (see p. 82) Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions. SC 4.1 Does the wetland 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 SC 4.3 NO = go to SC 4.2 SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? YES = go to 4.3 NO = Is not a bog for rating 	
	 SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries, 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 = Category I bog NO = go to question 4.4 	
	 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. SC 4.4 Is the unit, or any part of it, forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, 	
	western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
SC5	Forested Wetlands (see p. 85)	
	 Does the wetland unit have an area of forest (you should have identified a forested class, if present, in question H 1.1) rooted within its boundary that meet at least one of the following three criteria? ☐ The wetland is within the "100 year" floodplain of a river or stream. ☐ Aspen (Populus tremuloides) are a dominant or co-dominant of the "woody" vegetation. (Dominants means it represents at least 50% of the cover of woody species, co-dominant means it represents at least 20% of the total cover of woody species.) ☐ There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see p. 83). ☐ YES = got o SC 5.1 	
	 SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees? Slow growing trees are: western red cedar (<i>Thuja plicata</i>), Alaska yellow cedar (<i>Chamaecyparis nootkatensis</i>), pine spp. mostly "white" pine (Pinus monticola), western hemlock (<i>Tsuga heterophylla</i>), Englemann spruce (<i>Picea engelmannii</i>)? □ YES = Category I ○ NO = go to SC 5.2 	Cat. I
	SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species? \square YES = Category I \square NO = go to SC 5.3	Cat. I
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (<i>alnus rubra</i>), thin-leaf (A. <i>tenuifolia</i>); Cottonwoods – narrow-leaf (<i>Populus angustifolia</i>), black (<i>P. balsamifera</i>); Willows – peach-leaf (Salix <i>amygdaloides</i>), Sitka (S. <i>sitchensis</i>), Pacific (S. <i>lasiandra</i>), Aspen – <i>Populus tremuloides</i>), Water Birch	Cat. II
	(Betula occidentalis) \blacksquare YES = Category II \blacksquare NO = go to SC 5.5	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories. If you answered NO for all types enter "Not Applicable" on p. 1	II
	in jou answered in the for an types enter instrupticable on p. 1	

WETLAND RATING FORM -EASTERN 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 wetl	and (if known): <u>W-RW-2</u>					Date	e of site visit:	7/19/16
Rated	by: <u>S.</u>	Caruana	Trained by Ecolo	ogy?	Yes	🛛 No	D	ate of training	g:
SEC:	<u>3</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10</u>	<u>East</u>	Is S/T/	R in Appen	dix D? 🗌 Ye	s 🛛 No	
		Map of wetla	nd unit: Figure	e <u>4</u>		Estimated	size <u>0.13ac</u>		
			SUMMA	ARY OF	F RATIN	G			
Categ	ory bas	ed on FUNCTIONS provid				🗌 II		IV	
		Category I = Score > 70		Score f	or "Wate	r Quality" H	Functions	6	
		Category II = Score 51 - 6	9	Sc	ore for H	Iydrologic H	Functions	6	
	0	Category III = Score 30 - 5	0		Score f	or Habitat I	Functions	18	
	C	Category IV = Score < 30			TOTAL	score for I	Functions	30	1
Catego	ory bas	ed on SPECIAL CHARACT	ERISTCS of We	etland:	[] I	II 🖂		Does not	Apply
		Final Ca	tegory (choos	se the "ł	nighest" c	category fro	m above")	II	
		Summary of b	asic information	n about					
		Wetland Type Vernal Pool		Deme		nd Class			
		Alkali		Rive	<u>essional</u> rine				
		Natural Heritage Wet	land	-	-fringe				
		Bog		Slope	е		\square		
		Forest				has multiple			
		None of the above		HGM	I classes	present			
Does t	If	land being rated meet any you answer YES to any of th gulations regarding the speci	e questions belo	w you w			ne wetland accor	ding to the	
Ch	eck Li	st for Wetlands that Nee	d Special and	that ar	e Not In	ncluded in	the Rating	YES	NO
	Endang For the	e wetland unit been documen gered animal or plant specie purposes of this rating syster federal database.	es (T/E species)?		-				
	Endang wetland	e wetland unit been documer gered animal species? For t d is on the appropriate state egorized as Category 1 Natu	he purposes of th database. Note:	nis rating Wetlan	g system, ds with S	"document tate listed p	ed" means the blant species		\boxtimes
SP3.	Does th	he wetland unit contain indi	viduals of Priorit	y specie	s listed b	by the WDF	W for the state?		\boxtimes
	wetland	he wetland unit have a local d has been identified in the s cal management plan as havi	Shoreline Master	Program					\boxtimes

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number:	W-RW-2_
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Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern Washington

	he hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with tiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.	
1.	 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 open water (without any vegetation on the surface) where at least 20 acres (8 ha) in size; At least 30% of the open water area is deeper than 3 m (10 ft)? 	
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacustrine fringe)	
2.	Does the wetland unit meet all of the following criteria?	
3.	Is the wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes". <i>The wetland can contain depressions that are filled with water when the river is not flooding</i> . NO – go to Step 4 YES – The wetland class is Riverine	
4.	Is the wetland unit in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. <i>This means that any outlet, if present is higher than the interior of the wetland.</i>	
5.	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 DESCRIBE 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% of 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.	ne
	HGM Classes Within One Delineated Wetland BoundaryClass to Use for Rating	
	Slope + RiverineRiverineSlope + DepressionalDepressionalSlope + Lake-fringeLake-fringeDepressional + Riverine (riverine is within boundary of depression)Depressional	

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

Depressional

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outlet	
	• Wetland has a highly constricted permanently flowing outlet	
	Wetland has a permanently flowing surface outlet	
	YES points = 3 I NO points = 0	
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 	Figure 🗌
	• Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of area	
	 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.	Figure 🗌
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 3	g
	• Area seasonally ponded is $1/4$ to $1/2$ total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation/flooding	
	Total for D 1Add the points in the boxes above	
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?	
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	Multiplier
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	
	Other	
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>	
D 3	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
D 3	D 3.1 Characteristics of surface water flows out of the wetland unit:	(see p.59)
	• Wetland has no surface water outlet	
	 Wetland has an intermittently flowing outlet	
	 Wetland has a permanently flowing surface outlet	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland	
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water).	
	• Marks of ponding are at least 3 ft. above the surface points = 8	
	 The wetland is a "headwater" wetland (see p. 39) points = 6 Marks are 2 ft. to < 3 ft. from surface	
	• Marks are 1 ft. to < 2 ft. from surface	
	 Marks are 6 in. to < 1 ft. from surface	
	Total for D 3 Add the points in the boxes above	r1
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
–	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland	
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources	
	from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>	
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems 	Multiplier
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	
	$\square YES multiplier is 2 \square NO multiplier is 1$	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 1/3 area of wetland	Figure 🗌
	R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub > 2/3 the area of the wetland	Figure 🗌
	Total for R1 Add the points in the boxes above	
R 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. Other NO multiplier is 1	(see p. 46) Multiplier
٠	TOTAL – Water Quality Functions	
	Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> . HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.	
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
	R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is between 1 and < 2	Figure 🗌
	R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): • Forest or shrub for more than 2/3 the area of the wetland	Figure
	Total for R3 Add the points in the boxes above	(50)
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding	(see p.50) Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from R3 by the multiplier in R4. <i>Record score on p.1 of field form.</i>	

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) wide points = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked	Figure <u> </u>
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure <u> </u>
	 Other vegetation that is not aquatic bed in > 2/3 vegetated area	
	Total for L1 Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p.53)
	Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other	Multiplier
	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from L1 by the multiplier in L2.	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from L1 by the multiplier in L2. <i>Record score on p.1 of field form.</i>	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (choose the highest scoring description that matches conditions in the wetland) • > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide points = 6 • > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) wide points = 4 • > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide points = 4 • Vegetation is at least 6 ft. (2m) wide points = 2 • Vegetation is less than 6 ft. (2m) wide	Figure <u> </u>
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1	Multiplier
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from L3 by the multiplier L4.	
1	Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	0
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants	Figure 🗌
	 are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons 	6
	Total for S 1Add the points in the boxes above	6
S 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 58)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier 1
•	TOTAL – Water Quality Functions Multiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.	6
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	Does the wetland unit have the potential to reduce flooding and stream erosion?	(see p.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	0
	Total for S3Add the points in the boxes above	6
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61)	
	Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply</i> . Wetland has surface runoff that can cause flooding problems downgradient Other	Multiplier 1
	☐ YES multiplier is 2 ☑ NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	<u>6</u>

Comments: _____

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetatian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed 	Figure 📃
	Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 I typepoints = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	1
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	0
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands.	Figure 🗌
	$\Box YES = 3 \text{ points } \& \text{ go to H 1.4} \qquad \Box NO = \text{go to H 1.3.2}$ H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?}	0
	$\square YES = 3 \text{ points}$ $\square YES = 3 \text{ points}$ $\square Map showing areas of open water$	U
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: > 9 species 4 - 9 species < 4 species List species below if you wish:	0
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🔲
	None = 0 points $Low = 1$ point $Moderate = 2$ points Moderate = 2 points Moderate = 2 points Moderate = 2 points High = 3 points Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high". Use maps from H 1.1 and H 1.3	1

	 H 1.6 <u>Special Habitat Features</u> (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number points you put into the next column. □ Loose rocks larger than 4" <u>or</u> large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream □ Cattails or bulrushes are present within the unit □ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of edge □ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity □ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs herbaceous, moss/ground cover) 	the	1
	H 1 TOTAL Score – potential to provide habitat Add the scores in the column all		3
Н2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	010	(only 1 score
H 2	H 2.1 <u>Buffers</u> (see P. 71):		per box)
	H 2.1 <u>Builets</u> (see r. /1). Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturb Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structur paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water or > 50% circumference. points □ No paved areas (except paved trails) or buildings within 80 ft (25m) of wetland > 95% circumference.	= 5 = 4 = 3 = 3 = 2 = 1 = 0	Figure □ 4
	 H 2.2 Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridat least 1/4 mile long with surface water or water flowing water throughout most of the yea 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream pasture to edge of stream are considered breaks in the corridor). YES = 4 points (go to H 2.3) INO = go to H 2.2.2 H. 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "we corridor, OR a riverine wetland without a surface channel connecting to the stream? I YES = 2 points (go to H 2.3) INO = go to H 2.2.3 H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? YES = 1 point I NO = 0 points	r (> , or	5

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>18</u>
	Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. Image: See p. 75) Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. Image: See p. 75) Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. Image: See points Image: See points	Points will be subtracted 0
<u>H 3</u>	Does the wetland unit have indicators that its ability to provide habitat is reduced? H 3.1 Indicator of reduced habitat functions (see p. 75)	Points
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	15
	Does not meet any of the four criteria above	
	• There is at least 1 wetland within 1/2 mile points = 1	2
	disturbed points = 2 \boxtimes	-
	 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development	
	relatively undisturbed (light grazing in the connection or an open water connection along a	
	 reservoirs.) points = 5 There are at least 3 other wetlands within 1/2 mile, and the connections between them are 	
	(Generally, this means outside boundaries of reclamation areas, irritation district, or	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures.	
	H 2.4 <u>Landscape</u> : Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)	
	If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points	4
	diameter at the largest end, and > 6 m (20 ft) long. If we land has 2 or more Priority Habitats = 4 points	Л
	30 cm (12 in) in eastern Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in	
	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 >	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	 provide functional life history requirements for instream fish and wildlife resources. Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, 	
	Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A definition will be developed later in Fall 2008. (<i>check WDFW web site</i>)	
	terrestrial ecosystems which mutually influence each other.	
	 conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and 	
	Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a	
	oak component is important (full descriptions in WDFW PHS report p. 158). Juniper Savannah: All juniper woodlands (SE part of state only; check map)	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	snags, and quantity of large downed material is generally less than that found in old-growth.	
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. Mature: Stands $80 - 160$ yrs old. Decay, decadence, numbers of	
	Old-growth/Mature forests (east of Cascade crest): (full descriptions in WDFW PHS report p. 157). Old-	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>).	
	fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
	NOTE: the connections to the habitats can be disturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit?	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	
	U.2.2 Near or adjacent to other priority hebitate listed by WDEW (see new and complete descriptions of WDEW	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.
ľ	SC1	Vernal pools (see p.79)	
	BCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?	
		Its only source of water is rainfall or snowmelt from a small contributing basin and has no	
		groundwater input.	
		Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
		annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a	
		vernal pool.	
		The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer	
		such as basalt or clay.	
		Surface water is present for less than 120 days during the "wet" season.	
		\square YES = Go to SC 1.1 \square NO not a vernal pool	
ł		SC 1.1 Is the vernal pool relatively undisturbed in February and March?	
		YES = Go to SC 1.2 NO = not a vernal pool with special	
		characteristics	
ł		SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	
		wetlands, rivers, lakes etc.)?	🗌 Cat. II
		$\square $ YES = Category II $\square $ NO = Category III	🗌 Cat. III
ł		Alkali wetlands (see p.81)	
l	SC2	Does the wetland unit meet one of the following two criteria?	
		The wetland has a conductivity $> 3.0 \text{ mS/cm}$.	
		The wetland has a conductivity > 3.0 mS/cm. The wetland has a conductivity between 2.0 – 3.0 mS, and more than 50% of the plant cover in the	
		wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali	
		systems).	
		If the wetland is dry at the time of your field visit, the central part of the area is covered with a	
		layer of salt.	
		OR does the wetland meet two of the following three sub-criteria?	
		Salt encrustations around more than 80% of the edge of the wetland.	
		More than 3/4 of the plant cover consists of species listed on Table 2.	
		A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	
		may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
		\square YES = Category I \square NO – not an alkali wetland	
ł	SC3	Natural Heritage Wetlands (see p. 82)	
	505	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
		SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?	
		(This question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square	
		SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state	
		threatened or endangered plant species?	Cat. I
ļ		\square YES = Category 1 \square NO – not a natural heritage wetland	

SC4	Bogs (see p. 82) Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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.)	
	$\square YES = go to SC 4.3 \qquad \qquad \square NO = go to SC 4.2$	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \Box YES = go to 4.3 \boxtimes NO = Is not a bog for rating SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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)?	
	\square YES = Category I bog \square NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	Cat. I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	
	$\square \textbf{ YES} = Category \ 1 \ bog \qquad \textbf{ NO}$	
SC5	Forested Wetlands (see p. 85)	
	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	question $H 1.1$ rooted within its boundary that meet at least one of the following three criteria?	
	 The wetland is within the "100 year" floodplain of a river or stream. Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation. 	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	\square YES = got o SC 5.1 \square NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (Thuja plicata), Alaska yellow cedar	
	(Chamaecyparis nootkatensis), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I
	(Tsuga heterophylla), Englemann spruce (Picea engelmannii)?	\boxtimes
	$\square \ \mathbf{YES} = \text{Category I} \qquad \qquad \blacksquare \ \mathbf{NO} = \text{go to SC 5.2}$	
	SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species?	Cat. I
	$\square \ \mathbf{YES} = \text{Category I} \qquad \qquad \blacksquare \ \mathbf{NO} = \text{go to SC 5.3}$	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (alnus rubra), thin-leaf (A. tenuifolia);	
	Cottonwoods – narrow-leaf (<i>Populus angustifolia</i>), black (<i>P. balsamifera</i>); Willows – peach-leaf (Salix	~
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis) \square YES = Category II \square NO = go to SC 5.5	\boxtimes
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	C / T
	\square YES = Category II	Cat. II
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	т
1	If you answered NO for all types enter "Not Applicable" on p. 1	II

WETLAND RATING FORM -EASTERN 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 w	etland (if known): <u>W-RW-3</u>					Date	of site visit:	7/21/16
Rated	by:	<u>S. Caruana</u> Tra	ained by Ecolo	gy?]Yes 🛛	🛛 No	D	ate of training	;:
SEC:	<u>23</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 E</u>	last	Is S/T/F	R in Append	lix D? 🗌 Yes	s 🛛 No	
		Map of wetland	unit: Figure	<u>5</u>		Estimated	size <u>4.99ac</u>		
			SUMMA	RY OF	RATIN	G			
Categ	ory	based on FUNCTIONS provided		ΠI				⊠ IV	
		Category I = Score > 70] ;	Score fo	or "Water	Quality" F	unctions	0	
		Category II = Score 51 - 69		Sc	ore for H	ydrologic F	unctions	2	
		Category III = Score 30 - 50			Score fo	or Habitat F	unctions	11	
		Category IV = Score < 30			TOTAL	score for F	unctions	13	
Categ	ory b	pased on SPECIAL CHARACTER	- RISTCS of Wet	land:	🗌 I			🛛 Does not	Apply
		Final Cate	egory (choose	e the "h	ighest" ca	ategory fror	n above")	IV	
		Summary of basi	c information	about	the wetla	nd unit.	L.		
		Wetland Type				d Class			
		Vernal Pool		Depr	essional				
		Alkali		River	·ine		\square		
		Natural Heritage Wetlan	nd	Lake	-fringe				
		Bog		Slope					
		Forest		Checl	k if unit h	as multiple			
		None of the above			classes p				
Does 1		vetland being rated meet any of If you answer YES to any of the or regulations regarding the special	questions below	v you w			e wetland accord	ding to the	
Ch	leck	List for Wetlands that Need	Special and t	hat are	e Not In	cluded in t	the Rating	YES	NO
SP1.	<i>End</i> For	the wetland unit been documented angered animal or plant species (the purposes of this rating system e or federal database.	T/E species)?	-					\boxtimes
SP2.	Has End wetl	the wetland unit been documented angered animal species? For the and is on the appropriate state dat categorized as Category 1 Natural	purposes of the abase. Note:	is rating Wetland	g system, ls with St	"documente ate listed p	ed" means the lant species		\boxtimes
SP3.		s the wetland unit contain individ	-						\boxtimes
SP4.	wetl	s the wetland unit have a local sig and has been identified in the Sho local management plan as having	oreline Master l	Program					\boxtimes

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

We	tland name or number: W-RW-3	
	Classification of Vegetated Wetlands for Eastern	Washington
	he hydrologic criteria listed in each question do not apply to the entire unit bein ltiple HGM classes. In this case, identify which hydrologic criteria in questions	
1.	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 op surface) where at least 20 acres (8 ha) in size; At least 30% of the open water area is deeper than 3 m (10 ft)? 	ben water (without any vegetation on the
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lace	ustrine fringe)
2.	Does the 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 (unidirection flow subsurface, as sheetflow, or in a swale without distinct bank The water leaves the wetland without being impounded? NOTE: Surface water does not pond in these types of wetlands e shallow depressions or behind hummocks (depressions are usual). 	s. xcept occasionally in very small and
	\square NO – go to Step 3 \square YES – The wetland class is Slope	
3.	Is the wetland unit in a valley or stream channel where it gets inundated by ov In general, the flooding should occur at least once every ten years to answer " that are filled with water when the river is not flooding.	
	$\square \text{ NO} - \text{go to Step 4} \qquad \qquad \boxtimes \text{ YES} - \text{The wetland class is Riverine}$	
4.	Is the wetland unit in a topographic depression, outside areas that are inundate ponds, or is saturated to the surface, at some time of the year. <i>This means that</i> <i>interior of the wetland</i> .	•
	\square NO – go to Step 5 \square YES – The wetland class is Depressional	
5.	Your wetland unit seems to be difficult to classify and probably contains sever seeps at the base of a slope may grade into a riverine floodplain, or a small str zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF TH IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make following table to identify the appropriate class to use for the rating system if within your wetland. NOTE: Use this table only if the class that is recommend more of the total area of the wetland unit being rated. If the area of the class I unit, classify the wetland using the class that represents more than 90% of the	eam within a depressional wetland has a IE HYDROLOGIC REGIMES DESCRIBED a rough sketch to help you decide). Use the you have several HGM classes present led in the second column represents 10% or isted in column 2 is less than 10% of the
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine (riverine is within boundary of depression) Depressional + Lake-fringe	Depressional Depressional
	$\mathbf{D} = \mathbf{D} = $	

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outletpoints = 5 Wetland has an intermittently flowing outletpoints = 3 	
	• Wetland has a highly constricted permanently flowing outlet	
	• Wetland has a permanently flowing surface outlet	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). YES points = 3 \square NO points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure 🗌
	 Wetland has persistent, ungrazed vegetation for > = 2/3 of area points = 5 Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of area points = 3 	
	• Wetland has persistent, ungrazed vegetation from $1/10$ to $< 1/3$ of areapoints = 1	
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	
	Do not count the area that is permanently ponded.	Figure 🗌
	• Area seasonally ponded is $> 1/2$ total area of wetland points = 3	
	 Area seasonally ponded is 1/4 to 1/2 total area of wetland	
	NOTE: See text for indicators of seasonal and permanent inundation/flooding	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?	
22	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</i>	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	 Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland 	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	
	Other	
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	(20)
D 3	Does the wetland unit have the potential to reduce flooding and stream erosion? D 3.1 Characteristics of surface water flows out of the wetland unit:	(see p.39)
	 Wetland has no surface water outlet wetland unit: 	
	 Wetland has no surface water outlet	
	• Wetland has a highly constricted permanently flowing outlet points = 4	
	• Wetland has a permanently flowing surface outlet	
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest	
	elevation of "permanent" water).	
	 Marks of ponding are at least 3 ft. above the surface	
	• Marks are 2 ft. to < 3 ft. from surfacepoints = 6	
	• Marks are 1 ft. to < 2 ft. from surface	
	 Marks are 6 in. to < 1 ft. from surfacepoints = 2 No marks above 6 in. or wetland has only saturated soilspoints = 0 	
	Total for D 3 Add the points in the boxes above	
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland	(**** r *** =)
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood	
	storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems.	
	Wetland drains to a river or stream that has flooding problems	Multiplier
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	
	Other	
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	 R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 1/3 area of wetland	Figure 🗌
	 Depressions cover > 1/10 area of wetland	0
	R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes):	Figure 🗌
	 Forest or shrub > 2/3 the area of the wetland	0
	Total for R1Add the points in the boxes above	0
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas,	
	 farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. 	Multiplier
	Other XES multiplier is 2	2
	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	<u>0</u>
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.	
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
	 R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. If the ratio is 2 or more	Figure <u> </u>
	 If the ratio is 1/2 to < 1	1
	 R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes):</i> Forest or shrub for more than 2/3 the area of the wetland	Figure <u> </u>
	 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 areapoints = 2 Vegetation does not meet above criteriapoints = 0 Aerial photo or map showing polygons of different vegetation types 	0
	Total for R3 Add the points in the boxes above	
R 4	 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding 	(see p.50) Multiplier
	\square Other $_$ \blacksquare YES multiplier is 2 \square NO multiplier is 1	2
	TOTAL – Hydrologic Functions Multiply the score from R3 by the multiplier in R4.	2

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) wide points = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked	Figure 🗌
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure 🗌
	 Herbaceous plants cover > 1/3 of the vegetated areapoints = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated areapoints = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated areapoints = 1 Aquatic bed cover > 2/3 of the vegetated areapoints = 0 Map with polygons of different vegetation types 	
	Total for L1Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	(see p.53)
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2	Multiplier
	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2.	
-	Record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	 L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (<i>choose the highest scoring description that matches conditions in the wetland</i>) > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide	Figure
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	 Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1 	Multiplier
	TOTAL – Hydrologic FunctionsMultiply the score from L3 by the multiplier L4.	
•	Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	
	 S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit	Figure <u> </u>
	 Dense, woody, vegetation > 1/2 of unitpoints = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unitpoints = 1 Does not meet any of the criteria above for herbaceous vegetationpoints = 0 Aerial photo or map with vegetation polygons 	
	Total for S 1Add the points in the boxes above	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 58)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from S1 by the multiplier in S2. <i>Record score on p.1 of field form.</i>	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	Does the wetland unit have the potential to reduce flooding and stream erosion?	(see p.59)
00	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	
	Total for S3Add the points in the boxes above	
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland has surface runoff that can cause flooding problems downgradient Other	Multiplier
	YES multiplier is 2 No multiplier is 1 TOTAL Hudralogia Exactions Multiply the same from \$2 by \$4. Becard econe on a 1 of field form	
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	

H 1	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score
H 1		per box)
	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	H 1.1 <u>Categories of Vegetation structure</u> : Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed	Figure <u> </u>
	 Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 1 typepoints = 0 Map of Cowardin vegetation classes and areas with different heights of emergents 	0
	H 1.2 Is one of the vegetation types "aquatic bed?" (see p.64) YES = 1 point \square NO = 0 points	0
	H 1.3 <u>Surface Water</u> (<i>see p. 65</i>) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of	Figure 🗌
	September)? Note: answer YES for Lake-fringe wetlands. \square YES = 3 points & go to H 1.4 \square NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side,	
	over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? \square YES = 3 points Map showing areas of open water	3
	H 1.4 <u>Richness of Plant Species</u> (see p. 66)	
	If 111Interferences of the projectes (act p. 60)Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold)You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purpleloosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)If you counted:> 9 species $4 - 9$ speciespoints = 2 $4 - 9$ speciespoints = 1 4 species <t< td=""><td>1</td></t<>	1
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🗌
	None = 0 points $Low = 1$ point $Moderate = 2$ points Moderate = 2 points Moderate =	1

	H 1.6	 Special Habitat Features (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream Cattails or bulrushes are present within the unit Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	1
		H 1 TOTAL Score – potential to provide habitatAdd the scores in the column above	6
H 2	Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 71): 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". Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. points = 5 □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference. points = 4 □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 4 □ 310 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. points = 3 □ 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. points = 3 □ No paved areas (except paved trails) or buildings within 80 ft (25m) of wetland > 95% circumfe	Figure □
	H 2.2	Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (> 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, or pasture to edge of stream are considered breaks in the corridor). Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water of a relatively of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? Image: Method water of a problem water of a problem water of a problem water of a problem water of a	5

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>11</u>
	Do the areas of open water in the welland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers.	vill be subtracted
<u>H 3</u>	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	Points
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	11
	• Does not meet any of the four criteria above points = 0	
	• There is at least 1 wetland within $1/2$ mile points = 1	1
	disturbed points = 2	
	 paved roads, fill, fields, heavy boat traffic or other development points = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by payed roads fill fields heavy boat traffic or other development -5	
	relatively undisturbed (light grazing in the connection or an open water connection along a	
	 reservoirs.) points = 5 There are at least 3 other wetlands within 1/2 mile, and the connections between them are 	
	(Generally, this means outside boundaries of reclamation areas, irritation district, or	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures.	
	H 2.4 <u>Landscape</u> : Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)	
	If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points	r
	If wetland has 2 or more Priority Habitats = 4 points	4
	30 cm (12 in) in eastern 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.	
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of >	
	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	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	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.	
	definition will be developed later in Fall 2008. (<i>check WDFW web site</i>)	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
	conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).	
	 Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a 	
	oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. Mature: Stands 80, 160 yrs old. Decay, decadence, numbers of	
	Old-growth/Mature forests (east of Cascade crest): (full descriptions in WDFW PHS report p. 157). Old-	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>).	
	fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
	<i>NOTE: the connections to the habitats can be disturbed.</i> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit?	
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.		
SC1	Vernal pools (see p.79)			
BCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?			
	☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no			
	groundwater input.			
	Wetland plants are typically present only in the spring; the summer vegetation is typically upland			
	annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a			
	vernal pool.			
	The soil in the wetland are shallow (<1 ft. deep (30 cm) and is underlain by an impermeable layer			
	such as basalt or clay.			
	Surface water is present for less than 120 days during the "wet" season.			
	\square YES = Go to SC 1.1 \square NO not a vernal pool			
	SC 1.1 Is the vernal pool relatively undisturbed in February and March?			
	YES = Go to SC 1.2 \square NO = not a vernal pool with special			
	characteristics			
	SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	🗌 Cat. II		
	wetlands, rivers, lakes etc.)?	🗍 Cat. III		
	$\square \ \mathbf{YES} = Category II \qquad \qquad \square \ \mathbf{NO} = Category III$			
SC2	Alkali wetlands (see p.81)			
	Does the wetland unit meet one of the following two criteria?			
	The wetland has a conductivity $> 3.0 \text{ mS/cm}$.			
	The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the			
	wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali			
	systems).			
	If the wetland is dry at the time of your field visit, the central part of the area is covered with a			
	layer of salt.			
	OR does the wetland meet two of the following three sub-criteria?			
	Salt encrustations around more than 80% of the edge of the wetland.			
	\square More than 3/4 of the plant cover consists of species listed on Table 2.			
	A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands			
	may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I		
	$\square \textbf{ YES} = Category I \qquad \qquad \boxtimes \textbf{NO} - not an alkali wetland$			
SC3	Natural Heritage Wetlands (see p. 82)			
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as			
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or			
	Sensitive plant species.			
	SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?			
	(This question is used to screen out most sites before you need to contact WNHP/DNR.)			
	S/T/R information from Appendix D or accessed from WNHP/DNR web site			
	YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square			
	SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state			
	threatened or endangered plant species?	Cat. I		
	\square YES = Category 1 \square NO – not a natural heritage wetland			

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SC4	<u>Bogs</u> (see p. 82)	
~	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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.)	
	$\square YES = go to SC 4.3 \qquad \qquad \square NO = go to SC 4.2$	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \square YES = go to 4.3 \square NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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 = Category I bog \square NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	Cat I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
	$\Box \mathbf{YES} = \text{Category 1 bog} \qquad \mathbf{NO}$	
SC5	Forested Wetlands (see p. 85)	
	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	question $H 1.1$) rooted within its boundary that meet at least one of the following three criteria?	
	The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	\boxtimes YES = got o SC 5.1 \boxtimes NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (Thuja plicata), Alaska yellow cedar	
	(Chamaecyparis nootkatensis), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I
	(Tsuga heterophylla), Englemann spruce (Picea engelmannii)?	
	$\square \textbf{ YES} = Category I \qquad \qquad \blacksquare \textbf{ NO} = go to SC 5.2$	
	SC 5.2 Does the unit have areas where aspen (Populus tremuloides) as a dominant or co-dominant species?	Cat. I
	YES = Category I NO = go to SC 5.3	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (alnus rubra), thin-leaf (A. tenuifolia);	
	Cottonwoods – narrow-leaf (Populus angustifolia), black (P. balsamifera); Willows – peach-leaf (Salix	
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis)	
	\boxtimes YES = Category II \boxtimes NO = go to SC 5.5	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	\square YES = Category II	
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	
1	If you answered NO for all types enter "Not Applicable" on p. 1	<u>NA</u>

Wetland name or number:	W-v
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WETLAND RATING FORM -EASTERN 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	l (if known): <u>W-v</u>					Date	e of site visit:	7/21/16
Rated	by: <u>S. Ca</u>	<u>iruana</u>	Trained by Ecolo	ogy?	Yes	🛛 No	D	ate of training	g:
SEC:	<u>3</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 I</u>	East	Is S/T/	R in Appen	dix D? 🗌 Yes	s 🛛 No	
		Map of wetla	and unit: Figure	<u>3</u>		Estimated	size <u>0.02ac</u>		
			SUMMA	ARY OF	RATIN	G			
Categ	orv based	on FUNCTIONS provi							
cuttg	ory suscu								
	Ca	ategory I = Score > 70		Score for	or "Wate	r Quality" I	Functions	5	
	Cat	tegory II = Score 51 - 6	59	Sc	ore for H	Iydrologic H	Functions	6	
	Cate	egory III = Score 30 - 3	50		Score f	or Habitat I	Functions	19	
	Cate	egory IV = Score < 30			TOTAL	score for I	Functions	30	1
Categ	ory based o	on SPECIAL CHARAC	TERISTCS of We	tland:	ΠI			Does not	Apply
		Final C	ategory (choos	se the "h	nighest" c	category fro	m above")	II	
					-			n	
			asic information	about		and unit. nd Class			
		Wetland Type Vernal Pool		Depr	ressional				
		Alkali		River					
		Natural Heritage We	tland		-fringe				
		Bog	<u> </u>	Slope					
		Forest				has multiple			
		None of the above		HGM	I classes	present			
Does t	If you	d being rated meet any answer YES to any of t ations regarding the spec	he questions belov	w you w			e wetland accord	ding to the	
Ch		for Wetlands that Ne					the Rating	YES	NO
		etland unit been docume					0		
		ed animal or plant speci			-				\boxtimes
	For the pu	rposes of this rating syst	em, "documented	l" means	s the wet	land is on th	e appropriate		
CD2		deral database.	. 1 1 1	C.			1		
SP2.		etland unit been docume ed animal species? For							
		on the appropriate state							\boxtimes
		rized as Category 1 Natu							
SP3.	Does the v	vetland unit contain indi	viduals of Priorit	y specie	s listed b	y the WDF	W for the state?		\boxtimes
SP4.		vetland unit have a local							
		as been identified in the management plan as hav		-	n, the Cri	itical Areas	Ordinance, or		\boxtimes

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number: W-v____

Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern Washington

TC	i a a a construction and the second state of the				
	he hydrologic criteria listed in each question do not apply to the entire unit being ltiple HGM classes. In this case, identify which hydrologic criteria in questions				
1.	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 ope	en water (without any vegetation on the			
	surface) where at least 20 acres (8 ha) in size;				
	At least 30% of the open water area is deeper than 3 m (10 ft)?				
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacu	strine fringe)			
2.	Does the 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 (unidirection 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 types of wetlands ex shallow depressions or behind hummocks (depressions are usually 	cept occasionally in very small and			
	$\square \text{ NO} - \text{go to Step 3} \qquad \boxtimes \text{ YES} - \text{The wetland class is Slope}$	S fi alumeter and less than a foor deep)	•		
3.	Is the wetland unit in a valley or stream channel where it gets inundated by ove In general, the flooding should occur at least once every ten years to answer "ye that are filled with water when the river is not flooding.				
	\square NO – go to Step 4 \square YES – The wetland class is Riverine				
4.	Is the wetland unit in a topographic depression, outside areas that are inundated ponds, or is saturated to the surface, at some time of the year. <i>This means that interior of the wetland</i> .				
	\square NO – go to Step 5 \square YES – The wetland class is Depressional				
5.	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.				
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating			
	Slope + Riverine	Riverine			
	Slope + Depressional	Depressional			
	Slope + Lake-fringe	Lake-fringe			
	Depressional + Riverine (riverine is within boundary of depression)	Depressional			

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

Depressional

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	• Wetland has no surface water outlet	
	 Wetland has an intermittently flowing outletpoints = 3 Wetland has a highly constricted permanently flowing outletpoints = 3 	
	• Wetland has a permanently flowing surface outlet	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). YES points = 3 NO points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	F ¹
	• Wetland has persistent, ungrazed vegetation for $> = 2/3$ of area points = 5	Figure 🗌
	• Wetland has persistent, ungrazed vegetation from $1/3$ to $2/3$ of areapoints = 3	
	 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	Figure 🛄
	 Area seasonally ponded is 1/2 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland points = 0	
	NOTE: See text for indicators of seasonal and permanent inundation/flooding Map of Hydroperiods	
	Total for D 1Add the points in the boxes above	
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?	
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the watered that would otherwise reduce water quality in streams, lakes or groundwater down gradient	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	 Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland 	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	
	Other	
	YES multiplier is 2 INO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. Record score on p. 1 of field form	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion.	
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
	D 3.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outletpoints = 8 Wetland has an intermittently flowing outletpoints - 4 	
	• Wetland has a highly constricted permanently flowing outlet	
	• Wetland has a permanently flowing surface outlet	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland	
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water).	
	• Marks of ponding are at least 3 ft. above the surface	
	• The wetland is a "headwater" wetland (see p. 39) points = 6	
	• Marks are 2 ft. to < 3 ft. from surface	
	 Marks are 1 ft. to < 2 ft. from surface	
	• No marks above 6 in. or wetland has only saturated soils points = 0	
	Total for D 3Add the points in the boxes above	
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland	/
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood	
	storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems.	
	Wetland drains to a river or stream that has flooding problems	Multiplier
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	
	Other	
	YES multiplier is 2 INO multiplier is 1	
	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 1/3 area of wetland	Figure 🗌
	 Depressions cover > 1/10 area of wetland	0
	R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes):	Figure 🗌
	 Forest or shrub > 2/3 the area of the wetland	5
	Total for R1 Add the points in the boxes above	5
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas,	
	 farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality 	Multiplier
	standards. Other YES multiplier is 2 NO multiplier is 1	1
•	TOTAL – Water Quality Functions	<u>5</u>
•		<u>5</u>
• R 3	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion?	<u>5</u> (see p.47)
◆ R 3	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream.	(see p.47)
◆ <u>R 3</u>	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is 1/2 to < 1 points = 4 • If the ratio is 1/4 to < 1/2 points = 1 • If the ratio is 1/4 to < 1/4 If the ratio is 2 or map showing average widths	(see p.47)
◆ R 3	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more • If the ratio is 1/2 to < 1 • If the ratio is 1/4 to < 1/2 • If the ratio is < 1/4 • If the ratio is < 1/4 • If the ratio is 1/2 to < 1 • If the ratio is 1/2 to < 1 • If the ratio is 1/4 to < 1/2 • If the ratio is < 1/4 • If the ratio is < 1/4 • If the ratio is < 1/4 • If the ratio is < 1/4 to < 1/2 • If the ratio is < 1/4 • Forest or shrub for more than 2/3 the area of the wetland <th>(see p.47) Figure</th>	(see p.47) Figure
◆ R 3	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is 1/2 to < 1 points = 4 • If the ratio is 1/4 to < 1/2 points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 2 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 2 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4.	(<i>see p.47</i>) Figure □ 1
◆ <u> R 3</u>	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is 1/2 to < 1. points = 8 • If the ratio is 1/2 to < 1. points = 2 • If the ratio is 1/4 to < 1/2. points = 1 • If the ratio is 2 or more. points = 1 • If the ratio is 1/2 to < 1. points = 2 • If the ratio is 1/4 to < 1/2. points = 1 • If the ratio is 2 or More that slow down water velocities during floods: Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): • • Forest or shrub for more than 2/3 the area of the wetland points = 6 • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area points = 0 </th <th>(see p.47) Figure 1 Figure</th>	(see p.47) Figure 1 Figure
• R 3	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is 1/2 to < 1 points = 4 • If the ratio is 1/4 to < 1/2. points = 1 • If the ratio is < 1/4. Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): • Forest or shrub for more than 2/3 the area of the wetland points = 6 • Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4 • Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4 • Vegetation does not meet above criteria points = 1 • Vegetation does not meet above criteria points = 0	(<i>see p.47</i>) Figure □ 1 Figure □ 2
	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more	(see p.47) Figure □ 1 Figure □ 2 3
	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more. points = 10 • If the ratio is 1/2 to < 1. points = 4 • If the ratio is 1/2 to < 1. points = 1 • If the ratio is 1/4 to < 1/2. points = 1 • If the ratio is Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): • Forest or shrub for > 1/3 area OR herbaceous plants > 1/3 area points = 2 • Vegetation does not meet above criteria points = 10 • Vegetation does not meet above criteria points = 10 • Vegetation does not meet above criteria points = 2 • Vegetation does not meet above criteria points = 2 • Vegetation does not meet above criteria <th>(see p.47) Figure □ 1 Figure □ 2 3 (see p.50)</th>	(see p.47) Figure □ 1 Figure □ 2 3 (see p.50)

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	 L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33 ft. (10m) wide points = 6 Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked 	Figure 🗌
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure <u> </u>
	 Other vegetation that is not aquatic bed in > 2/3 vegetated areapoints = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated areapoints = 1 Aquatic bed cover > 2/3 of the vegetated areapoints = 0 Map with polygons of different vegetation types 	
	Total for L1Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the	(see p.53)
	 wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2 NO multiplier is 1 	Multiplier
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from L1 by the multiplier in L2.	
	Record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (choose the highest scoring description that matches conditions in the wetland) • > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 6 • > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) widepoints = 4 • > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 4 • Vegetation is at least 6 ft. (2m) widepoints = 2 • Vegetation is less than 6 ft. (2m) widepoints = 0 Aerial photo or map with Cowardin vegetation classes	Figure 🗌
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	 Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other XES_multiplier is 2 	Multiplier
	YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from L3 by the multiplier L4.	
•	<u>IOTAL</u> – Hydrologic Functions Multiply the score from L5 by the multiplier L4. Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	
	 S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 	Figure 🗌
	Aerial photo or map with vegetation polygons Total for S 1 Add the points in the boxes above	
C O		(
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	(see p. 58)
	Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier
٠	TOTAL– Water Quality FunctionsMultiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland 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.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	
	Total for S3Add the points in the boxes above	
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland has surface runoff that can cause flooding problems downgradient Other	Multiplier
	YES multiplier is 2 NO multiplier is 1	
-	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	

Comments: _____

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed 	Figure 🗌
	Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 I typepoints = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	1
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	0
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of	Figure 🗌
	September)? Note: answer YES for Lake-fringe wetlands. YES = 3 points & go to H 1.4 NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?	0
	$\square \text{ YES} = 3 \text{ points}$ $\square \text{ YES} = 3 \text{ points}$ $\square \text{ NO} = 0 \text{ points}$ $\square \text{ Map showing areas of open water}$	0
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species 4 - 9 species < 4 species List species below if you wish:	0
	H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Figure 🗌
	None = 0 points $Low = 1$ point $Moderate = 2$ points Moderate = 2 points Moderate = 2 points Moderate = 2 points Moderate = 2 points Figh = 3 points Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high". Use maps from H 1.1 and H 1.3	1

Wetland name or number: W-v_____

	 H 1.6 <u>Special Habitat Features</u> (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. □ Loose rocks larger than 4" <u>or</u> large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream □ Cattails or bulrushes are present within the unit □ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge □ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity □ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	1
	H 1 TOTAL Score – potential to provide habitat Add the scores in the column above	3
Н2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	 H 2.1 Buffers (see P. 71): 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". Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer. 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	2
	 H 2.2 Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (> 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream 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 unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? YES = 1 point NO = 0 points 	5

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>19</u>
	Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers.	will be subtracted
<u>H 3</u>	Does the wetland unit have indicators that its ability to provide habitat is reduced?H 3.1Indicator of reduced habitat functions (see p. 75)	Points
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	16
<u> </u>	Does not meet any of the four criteria above	
	• There is at least 1 wetland within 1/2 mile points = 1	5
	disturbed points = 2	_
	 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development	
	relatively undisturbed (light grazing in the connection or an open water connection along a	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	(Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs.)	
	regime is not influenced by irrigation practices, dams, or water control structures.	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water	
	H 2.4 Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	No Priority 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 H 2.4)	
	If wetland has 1 Priority Habitat = 2 points	4
	diameter at the largest end, and > 6 m (20 ft) long. If we land has 2 or more Priority Habitats = 4 points	4
	30 cm (12 in) in eastern Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in	
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of >	
	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	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
	provide functional life history requirements for instream fish and wildlife resources.	
	Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A definition will be developed later in Fall 2008. (<i>check WDFW web site</i>)	
	terrestrial ecosystems which mutually influence each other.	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).	
	Juniper Savannah : All juniper woodlands (SE part of state only; check map)	
	oak component is important (full descriptions in WDFW PHS report p. 158).	
	 snags, and quantity of large downed material is generally less than that found in old-growth. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the 	
	due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of	
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics	
	 bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>). Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old- 	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial buncherses or a combination of both (full description of maximum formation of whether the second herbaceous flora (i.e., forbs), perennial	
	fish and wildlife (may include urban or urban growth areas) (full descriptions in WDFW PHS report p. 152).	
	 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 	
	<i>NOTE: the connections to the habitats can be disturbed.</i>	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit?	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	
	1122 Norman dimension to the helicity holicity of the WDEW (1) and 1)	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

ſ		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.				
	SC1	Vernal pools (see p.79)					
	SCI	Is the wetland unit less than 4,000 ft^2 , and does it meet at least two of the following criteria?					
		☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no					
		groundwater input.					
		Wetland plants are typically present only in the spring; the summer vegetation is typically upland					
		annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool.					
		The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer					
		such as basalt or clay.					
		Surface water is present for less than 120 days during the "wet" season.					
		YES = Go to SC 1.1 NO not a vernal pool					
ŀ		SC 1.1 Is the vernal pool relatively undisturbed in February and March?					
		YES = Go to SC 1.2 \square NO = not a vernal pool with special					
		characteristics					
ŀ		SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other					
		wetlands, rivers, lakes etc.)?	🗌 Cat. II				
		$\square YES = Category II \qquad \square NO = Category III$	🗌 Cat. III				
ŀ							
	SC2	<u>Alkali wetlands</u> (see p.81) Does the wetland unit meet one of the following two criteria?					
		The wetland has a conductivity $> 3.0 \text{ mS/cm}$.					
		The wetland has a conductivity $> 3.0 \text{ mS/cm}$. The wetland has a conductivity between 2.0 – 3.0 mS, and more than 50% of the plant cover in the					
		wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali					
		systems).					
		If the wetland is dry at the time of your field visit, the central part of the area is covered with a					
		layer of salt.					
		OR does the wetland meet two of the following three sub-criteria?					
		Salt encrustations around more than 80% of the edge of the wetland.					
		More than 3/4 of the plant cover consists of species listed on Table 2.					
		A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands					
		may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I				
		$\square \mathbf{YES} = Category I \qquad $					
ł	aaa	Natural Heritage Wetlands (see p. 82)					
F	SC3	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as					
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or					
		Sensitive plant species.					
		SC 3.1 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 \square or accessed from WNHP/DNR web site \square					
		YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square					
		SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state					
		threatened or endangered plant species?	Cat. I				
		$\square \mathbf{YES} = Category 1 \qquad \qquad \mathbf{NO} - not a natural heritage wetland$					

SC4	<u>Bogs</u> (see p. 82)	
	Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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.)	
	$\square YES = go to SC 4.3 \qquad \qquad \square NO = go to SC 4.2$	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \Box YES = go to 4.3 \Box NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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 = Category I bog NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	Cat. I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	
	\square YES = Category 1 bog \square NO	
CC5	Forested Wetlands (see p. 85)	
SC5	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	<i>question H 1.1</i>) rooted within its boundary that meet at least one of the following three criteria?	
	The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	There is at least $1/4$ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	\square YES = got o SC 5.1 \square NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (<i>Thuja plicata</i>), Alaska yellow cedar	
	(<i>Chamaecyparis nootkatensis</i>), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I
	(<i>Tsuga heterophylla</i>), Englemann spruce (<i>Picea engelmannii</i>)?	
	\square YES = Category I \square NO = go to SC 5.2	
	SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species?	C-4 T
	$\square YES = Category I \qquad \square NO = go to SC 5.3$	Cat. I
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (<i>alnus rubra</i>), thin-leaf (A. <i>tenuifolia</i>);	
	Cottonwoods – narrow-leaf (<i>Populus angustifolia</i>), black (<i>P. balsamifera</i>); Willows – peach-leaf (Salix	~
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis) \Box No. 1944 SC 55	\boxtimes
	\bigvee YES = Category II \square NO = go to SC 5.5	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	$\boxtimes \mathbf{YES} = Category II$	\square
	Category of wetland based on Special Characteristics	
	Choose the "highest" rating if wetland falls into several categories.	
	If you answered NO for all types enter "Not Applicable" on p. 1	II

Wetland	name	or	number:	W-x	
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WETLAND RATING FORM -EASTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users – Updated Oct. 2008 with the new WDFW definitions for priority habitats

Rated by: S. Caruana Trained by Ecology? Yes No Date of training: SEC: 10 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? Yes No Map of wetland unit: Figure 3 Estimated size 0.02ac SUMMARY OF RATING Category based on FUNCTIONS provided by wetland: I II III III IV Category I = Score for "Water Quality" Functions 9 9 10					
Map of wetland unit: Figure 3 Estimated size 0.02ac SUMMARY OF RATING Category based on FUNCTIONS provided by wetland: I II III					
SUMMARY OF RATING Category based on FUNCTIONS provided by wetland: I II III III III					
Category based on FUNCTIONS provided by wetland:					
Category based on FUNCTIONS provided by wetland:					
Category I = Score > 70 Score for "Water Quality" Functions 9					
Category II =Score 51 - 69Score for Hydrologic Functions3					
Category III = Score 30 - 50 Score for Habitat Functions 14					
Category IV = Score < 30 TOTAL score for Functions 26					
Category based on SPECIAL CHARACTERISTCS of Wetland: I II Does not Apply					
Final Category (choose the "highest" category from above") IV					
Summary of basic information about the wetland unit.					
Wetland TypeWetland ClassVernal PoolDepressional					
Alkali Image: Construction of the second					
Natural Heritage Wetland Image: Control of the second					
Bog Slope 🛛					
Forest Image: Check if unit has multiple					
None of the aboveIHGM classes presentI					
Does the wetland being rated meet any of the criteria below?					
If you answer YES to any of the questions below you will need to protect the wetland according to the					
regulations regarding the special characteristics found in the wetland.					
Check List for Wetlands that Need Special and that are Not Included in the RatingYESNO					
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or					
Endangered animal or plant species (T/E species)?					
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.					
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or					
Endenced animal encodes? For the numbers of this rating system "decommented" means the					
wetland is on the appropriate state database. Note: Wetlands with State listed plant species					
are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).					
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?					
SP4. <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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number: W-x____

Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern 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.					
 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 open water (without any vegetation) 						
	surface) where at least 20 acres (8 ha) in size; At least 30% of the open water area is deeper than 3 m (10 ft)?					
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacus	strine fringe)				
2. Does the 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 m 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 types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot dee 					
	\square NO – go to Step 3 \blacksquare YES – The wetland class is Slope					
3.	Is the wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes". <i>The wetland can contain depressions</i> <i>that are filled with water when the river is not flooding.</i>					
	\square NO – go to Step 4 \square YES – The wetland class is Riverine					
4.	. Is the wetland unit in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. <i>This means that any outlet, if present is higher than the interior of the wetland.</i>					
	\square NO – go to Step 5 \square YES – The wetland class is Depressional					
5.	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% of more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.					
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating				
	Slope + Riverine	Riverine				
	Slope + Depressional	Depressional				
	Slope + Lake-fringe	Lake-fringe				
	Depressional + Riverine (riverine is within boundary of depression)	Depressional				

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

Depressional

D	Depressional and Flat Wetlands	Points	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)	
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)	
	D 1.1 Characteristics of surface water flows out of the wetland unit:		
	• Wetland has no surface water outlet		
	 Wetland has an intermittently flowing outlet		
	• Wetland has a permanently flowing surface outlet		
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definition of soil types). YES points = 3 NO points = 0		
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Eigung 🗌	
	• Wetland has persistent, ungrazed vegetation for $> = 2/3$ of area points = 5	Figure 🗌	
	• Wetland has persistent, ungrazed vegetation from $1/3$ to $2/3$ of area		
	 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 		
	Map of Cowardin vegetation classes		
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌	
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	rigule 🛄	
	 Area seasonally ponded is 1/2 total area of wetland		
	• Area seasonally ponded is $< 1/4$ total area of wetland points = 0		
	NOTE: See text for indicators of seasonal and permanent inundation/flooding		
	Total for D 1Add the points in the boxes above		
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?		
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into		
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>		
	may have pollutants coming from several sources, but any single source would qualify as opportunity.		
	Grazing in the wetland or within 150 ft		
	Untreated stormwater discharges to wetland		
	Tilled fields or orchards within 150 ft. of wetland		
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed		
	fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft. of wetland		
	Wetland is fed by groundwater high in phosphorus or nitrogen		
	Other		
	YES multiplier is 2 INO multiplier is 1		
	TOTAL – Water Quality Functions Multiply the score from D1 by D2. Record score on p. 1 of field form HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion. Indicators that wetland functions to reduce flooding and stream erosion.		
D 3			
D 3	D 3.1 Characteristics of surface water flows out of the wetland unit:		
	Wetland has no surface water outlet		
	• Wetland has an intermittently flowing outlet		
	• Wetland has a highly constricted permanently flowing outlet points = 4		
	• Wetland has a permanently flowing surface outlet		
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest		
	elevation of "permanent" water).		
	• Marks of ponding are at least 3 ft. above the surface points = 8		
	• The wetland is a "headwater" wetland (see p. 39) points = 6		
	 Marks are 2 ft. to < 3 ft. from surface		
	 Marks are 1 n. to < 2 n. from surface		
	 No marks above 6 in. or wetland has only saturated soils points = 0 		
	Total for D 3Add the points in the boxes above		
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)	
- ·	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland		
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood		
	storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply		
	from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> Use Wetland is in a headwater of a river or stream that has flooding problems.		
	Wetland drains to a river or stream that has flooding problems		
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or		
	stream that has flooding problems		
	Other		
	YES multiplier is 2 NO multiplier is 1		
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .		

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 1/3 area of wetland	Figure 🗌
	 Depressions cover > 1/10 area of wetland	
	No depressions present	
	height. This is not Cowardin vegetation classes):	Figure 🗌
	 Forest or shrub > 2/3 the area of the wetlandpoints =10 Forest or shrub 1/3 - 2/3 area of the wetlandpoints = 5 	
	• Ungrazed, herbaceous plants > 2/3 area of wetland points = 5	
	 Ungrazed herbaceous plants 1/3 – 2/3 area of wetland	
	Arial photo or map showing polygons of different vegetation cover	
	Total for R1 Add the points in the boxes above	
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area	
	 Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. 	Multiplier
	Other YES multiplier is 2	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> .	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation.	
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
	 R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. If the ratio is 2 or more	Figure 🗌
	R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or	Figure
	 shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub for more than 2/3 the area of the wetland points = 6 Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 2 Vegetation does not meet above criteria points = 0 Aerial photo or map showing polygons of different vegetation types 	
	Total for R3Add the points in the boxes above	
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p.50)
	 Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other 	Multiplier
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from R3 by the multiplier in R4. <i>Record score on p.1 of field form.</i>	

L	Lake-fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	L 1.1 Average width of vegetation along the lakeshore: • Vegetation is more than 33 ft. (10m) wide points = 6 • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked	Figure <u> </u>
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area	Figure 🗌
	 Herbaceous plants cover > 2/3 of the vegetated area points = 4 Herbaceous plants cover > 1/3 of the vegetated area points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed cover > 2/3 of the vegetated area points = 0 Map with polygons of different vegetation types 	
	Total for L1Add the points in the boxes above	
L 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p.53)
	Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Residential or urban areas are within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2 NO multiplier is 1	Multiplier
	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2.	
-	Record score on p.1 of field form.	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	(54)
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion? L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>):	(see p.54)
	 1 5.1 Average with and characteristics of vegetation and only in takes for the highest scoring description that matches conditions in the welland) > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 6 > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) widepoints = 4 > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) widepoints = 4 Vegetation is at least 6 ft. (2m) widepoints = 2 Vegetation is less than 6 ft. (2m) widepoints = 0 	Figure <u> </u>
L 4	Does the wetland have the <u>opportunity</u> to reduce erosion?	(see p. 55)
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1	Multiplier
	<u>TOTAL</u> – Hydrologic Functions Multiply the score from L3 by the multiplier L4.	
•	Record score on p.1 of field form.	

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	3
	S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	Figure 🗌
	 Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons 	6
	Total for S 1Add the points in the boxes above	9
S 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 58)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	 Grazing in the wetrand of within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1 	Multiplier
•	TOTAL – Water Quality FunctionsMultiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.	9
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	Does the wetland unit have the potential to reduce flooding and stream erosion?	(see p.59)
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, rigid vegetation> 1/2 - 90% area of unit points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2
	Total for S3Add the points in the boxes above	3
S 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream	
	side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> Wetland has surface runoff that can cause flooding problems downgradient	Multiplier 1
	Other YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>	3

Comments: _____

Thes	e questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)	
	 H 1.1 <u>Categories of Vegetation structure</u>: Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. ⊠ Aquatic bed 	Figure 🗌
	Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 - 6 typespoints = 3 3 typespoints = 2 Map of Cowardin vegetation classes and areas with different heights of emergents	1
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	1
	Image: Surface Water (see p. 65) Image: NO = 0 points H 1.3 Surface Water (see p. 65) H 1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4	Figure 🗌
	acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? <i>Note: answer YES for Lake-fringe wetlands.</i>	
	YES = 3 points & go to H 1.4 \boxtimes NO = go to H 1.3.2H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?	0
	$\square YES = 3 \text{ points}$ $\square NO = 0 \text{ points}$ $\square Map \text{ showing areas of open water}$	
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: > 9 species points = 2 4 - 9 species points = 1 < 4 species points = 0 List species below if you wish:	0
	H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Figure <u> </u>
	None = 0 points Nome = 0 points Low = 1 point Low = 1 point Moderate = 2 points Moderate = 2 points (riparian braided channels] Mote: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high". Use maps from H 1.1 and H 1.3	1

	H 1.6	 Special Habitat Features (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream Cattails or bulrushes are present within the unit Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	1
		H 1 TOTAL Score – potential to provide habitatAdd the scores in the column above	3
Н2	Does t	he wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 71): 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". Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer. □ 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	Figure 🗌
	H 2.2	Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (> 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream 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 unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? □ YES = 2 points (go to H 2.3) H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? ○ YES = 1 point	1

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>4</u>
	H 3.1 Indicator of reduced habitat functions (see p. 75) Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. YES = 5 points NO = 0 points	Points will be subtracted 0
H 3		D :
	H 2 TOTAL Score – opportunity for providing habitatAdd the scores in the columns above	11
	• Does not meet any of the four criteria above	
	• There is at least 1 wetland within $1/2$ mile points = 1	1
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed points = 2	
	paved roads, fill, fields, heavy boat traffic or other development	
	relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	(Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs.)	
	regime is not influenced by irrigation practices, dams, or water control structures.	
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water	
	H 2.4 Landscape: Choose the one description of the landscape around the wetland that best fits. (see p. 76)	
	If wetland has 1 Priority Habitat = 2 points No Priority 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 H 2.4)	4
	diameter at the largest end, and > 6 m (20 ft) long. If we land has 2 or more Priority Habitats = 4 points	4
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > $30 \text{ cm} (12 \text{ in})$ in eastern Washington and are > $2 \text{ m} (6.5 \text{ ft})$ in height. Priority logs are > $30 \text{ cm} (12 \text{ in})$ in	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay	
	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.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
	provide functional life history requirements for instream fish and wildlife resources.	
	 definition will be developed later in Fall 2008. (<i>check WDFW web site</i>) Instream: The combination of physical, biological, and chemical processes and conditions that interact to 	
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
	conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).	
	 Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>) Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a 	
	oak component is important (full descriptions in WDFW PHS report p. 158).	
	snags, and quantity of large downed material is generally less than that found in old-growth. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
	due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of	
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics	
	bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>). Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old-	
	Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial	
	Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>).	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections to the habitats can be disturbed.</i>	
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ia are met.
SC1	Vernal pools (see p.79)	
BCI	Is the wetland unit less than 4,000 ft ² , and does it meet at least two of the following criteria?	
	Its only source of water is rainfall or snowmelt from a small contributing basin and has no	
	groundwater input.	
	Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
	annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a	
	vernal pool.	
	The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer	
	such as basalt or clay.	
	Surface water is present for less than 120 days during the "wet" season.	
	YES = Go to SC 1.1 NO not a vernal pool	
	SC 1.1 Is the vernal pool relatively undisturbed in February and March?	
	\square YES = Go to SC 1.2 \square NO = not a vernal pool with special	
	characteristics	
	SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	
	wetlands, rivers, lakes etc.)?	🗌 Cat. II
	$\square YES = Category II \qquad \square NO = Category III$	🗌 Cat. III
SC2	Alkali wetlands (see p.81)	
	Does the wetland unit meet one of the following two criteria?	
	The wetland has a conductivity $> 3.0 \text{ mS/cm}$.	
	The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the	
	wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali	
	systems). \Box If the method is denoted by time of some field with the control part of the same is considered with a	
	If the wetland is dry at the time of your field visit, the central part of the area is covered with a	
	layer of salt.	
	OR does the wetland meet two of the following three sub-criteria? Salt encrustations around more than 80% of the edge of the wetland.	
	More than 3/4 of the plant cover consists of species listed on Table 2.	
	A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	~
	may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
	$\square \textbf{YES} = Category I \qquad \qquad \square \textbf{NO} - not an alkali wetland$	
SC3	Natural Heritage Wetlands (see p. 82)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?	
	(This question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D \Box or accessed from WNHP/DNR web site \Box	
	YES \square Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square	
	SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state	Cat I
	threatened or endangered plant species?	Cat. I
	YES = Category 1 \square NO – not a natural heritage wetland	

-		
SC4	Bogs (see p. 82) Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation	
	in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to	
	rate the wetland based on its functions.	
	SC 4.1 Does the wetland 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 SC 4.3 NO = go to SC 4.2	
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake	
	or pond? \Box YES = go to 4.3 \Box NO = Is not a bog for rating	
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,	
	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 = Category I bog I NO = go to question 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16 " deep. If the pH is less	
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	SC 4.4 Is the unit, or any part of it, 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	Cat. I
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	
	$\Box \textbf{ YES} = Category \ 1 \ bog \qquad \textbf{NO}$	
SC5	Forested Wetlands (see p. 85)	
	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in	
	<i>question H 1.1)</i> rooted within its boundary that meet at least one of the following three criteria? The wetland is within the "100 year" floodplain of a river or stream.	
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.	
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it	
	represents at least 20% of the total cover of woody species.)	
	There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-	
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).	
	\square YES = got o SC 5.1 \square NO – not a forested wetland with special characteristics	
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow	
	growing native trees? Slow growing trees are: western red cedar (<i>Thuja plicata</i>), Alaska yellow cedar	
	(<i>Chamaecyparis nootkatensis</i>), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I
	(Tsuga heterophylla), Englemann spruce (Picea engelmannii)?	
	\square YES = Category I \square NO = go to SC 5.2	
	SC 5.2 Does the unit have areas where aspen (Populus tremuloides) as a dominant or co-dominant species?	Cat. I
	\square YES = Category I \square NO = go to SC 5.3	
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast	
	growing species? Fast growing species are: Alders – red (alnus rubra), thin-leaf (A. tenuifolia);	
	Cottonwoods - narrow-leaf (Populus angustifolia), black (P. balsamifera); Willows - peach-leaf (Salix	
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch	Cat. II
	(Betula occidentalis)	
	$\square \ \mathbf{YES} = \text{Category II} \qquad \square \ \mathbf{NO} = \text{go to SC 5.5}$	
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II
	YES = Category II	
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories.	
1	If you answered NO for all types enter "Not Applicable" on p. 1	

Wetland name or number: W-y____

WETLAND RATING FORM -EASTERN 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 w	vetland (if known): <u>W-y</u>					Date	of site visit:	7/20/16
Rated	by:	<u>S. Caruana</u> Tra	ained by Ecolo	gy?	Yes	🛾 No	D	ate of training	;:
SEC:	<u>3</u>	TWNSHP: <u>3 North</u>	RNGE: <u>10 E</u>	<u>last</u>	Is S/T/F	R in Appen	lix D? 🗌 Yes	s 🛛 No	
		Map of wetland	d unit: Figure	e <u>3</u>		Estimate	d size <u>0.03</u>		
			SUMMA	RY OF	RATIN	G			
Categ	gory	based on FUNCTIONS provided		I				⊠ IV	
		Category I = Score > 70] ;	Score fo	or "Water	· Quality" F	unctions	5	
		Category II = Score 51 - 69		Sco	ore for H	ydrologic F	unctions	6	
		Category III = Score 30 - 50			Score fo	or Habitat F	unctions	14	
		Category IV = Score < 30			TOTAL	score for F	unctions	23	
Categ	ory l	based on SPECIAL CHARACTER	- RISTCS of Wet	land:	ΠI	II		Does not	Apply
		Final Cate	gory (choose	e the "hi	ighest" ca	ategory fro	m above")	II	
		Summary of basic	c information	about t	he wetla	nd unit.			
		Wetland Type				d Class			
		Vernal Pool		-	essional				
		Alkali		River					
		Natural Heritage Wetlar	nd 🗌		fringe				
		Bog		Slope		1.1.1			
		Forest			classes p	as multiple			
		None of the above		пом	classes p	nesem			
Does	the v	wetland being rated meet any of If you answer YES to any of the or regulations regarding the special of	juestions below	v you wi			e wetland accord	ding to the	
Ch	neck	List for Wetlands that Need S					the Rating	YES	NO
SP1.	Has	the wetland unit been documented	l as a habitat f	for any H	Federally	listed Thre	eatened or		
		langered animal or plant species (\boxtimes
		the purposes of this rating system,	, "documented"	" means	the wetla	and is on th	e appropriate		
		e or federal database.							
SP2.		the wetland unit been documented	•	•					
		<i>langered animal species?</i> For the land is on the appropriate state dat							\boxtimes
		categorized as Category 1 Natural							
SP3.		es the wetland unit contain individu	-		-				\boxtimes
		es the wetland unit have a local sig		<u> </u>			*		
		land has been identified in the Sho							\boxtimes
	in a	local management plan as having	special signific	cance.					

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. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number: W-y____

Depressional + Lake-fringe

Classification of Vegetated Wetlands for Eastern Washington

	he hydrologic criteria listed in each question do not apply to the entire unit being ltiple HGM classes. In this case, identify which hydrologic criteria in questions		
1.	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 ope surface) where at least 20 acres (8 ha) in size;	en water (without any vegetation on the	
	At least 30% of the open water area is deeper than 3 m (10 ft)?		
	\square NO – go to Step 2 \square YES – The wetland class is Lake-fringe (lacu	strine fringe)	
2.	Does the 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 (unidirection flow subsurface, as sheetflow, or in a swale without distinct banks The water leaves the wetland without being impounded? 		у
	NOTE: Surface water does not pond in these types of wetlands ex shallow depressions or behind hummocks (depressions are usually).
	\square NO – go to Step 3 \blacksquare YES – The wetland class is Slope		
3.	Is the wetland unit in a valley or stream channel where it gets inundated by ove In general, the flooding should occur at least once every ten years to answer "ye that are filled with water when the river is not flooding.		
	\square NO – go to Step 4 \blacksquare YES – The wetland class is Riverine		
4.	Is the wetland unit in a topographic depression, outside areas that are inundated ponds, or is saturated to the surface, at some time of the year. <i>This means that interior of the wetland</i> .		
	\square NO – go to Step 5 \square YES – The wetland class is Depressional		
5.	Your wetland unit seems to be difficult to classify and probably contains several seeps at the base of a slope may grade into a riverine floodplain, or a small stree zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a following table to identify the appropriate class to use for the rating system if y within your wetland. NOTE: Use this table only if the class that is recommended more of the total area of the wetland unit being rated. If the area of the class list unit, classify the wetland using the class that represents more than 90% of the total section.	am within a depressional wetland has a E HYDROLOGIC REGIMES DESCRIBE rough sketch to help you decide). Use th ou have several HGM classes present ed in the second column represents 10% of sted in column 2 is less than 10% of the	ne
	HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating	
	Slope + Riverine	Riverine	
	Slope + Depressional	Depressional	
	Slope + Lake-fringe	Lake-fringe	
	Depressional + Riverine (riverine is within boundary of depression)	Depressional	

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

Depressional

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit:	
	• Wetland has no surface water outlet	
	 Wetland has an intermittently flowing outletpoints = 3 Wetland has a highly constricted permanently flowing outletpoints = 3 	
	• Wetland has a permanently flowing surface outlet	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). YES points = 3 NO points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	F ¹
	• Wetland has persistent, ungrazed vegetation for $> = 2/3$ of area points = 5	Figure 🗌
	• Wetland has persistent, ungrazed vegetation from $1/3$ to $2/3$ of areapoints = 3	
	 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of areapoints = 1 Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year.	Figure 🗌
	 Do not count the area that is permanently ponded. Area seasonally ponded is > 1/2 total area of wetland points = 3 	Figure 🛄
	 Area seasonally ponded is 1/2 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland points = 0	
	NOTE: See text for indicators of seasonal and permanent inundation/flooding Map of Hydroperiods	
	Total for D 1Add the points in the boxes above	
D 2	Does the wetland unit have the <u>opportunity</u> to improve water quality?	
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the watered that would otherwise reduce water quality in streams, lakes or groundwater down gradient	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	 Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland 	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	
	Other	
	YES multiplier is 2 INO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2. <i>Record score on p. 1 of field form</i>	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion.	
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
	D 3.1 Characteristics of surface water flows out of the wetland unit:	
	 Wetland has no surface water outletpoints = 8 Wetland has an intermittently flowing outletpoints - 4 	
	• Wetland has a highly constricted permanently flowing outlet	
	• Wetland has a permanently flowing surface outlet	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the surface of the wetland	
	(see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water).	
	• Marks of ponding are at least 3 ft. above the surface	
	• The wetland is a "headwater" wetland (see p. 39) points = 6	
	• Marks are 2 ft. to < 3 ft. from surface	
	 Marks are 1 ft. to < 2 ft. from surface	
	• No marks above 6 in. or wetland has only saturated soils points = 0	
	Total for D 3Add the points in the boxes above	
D 4	Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 42)
	Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland	
	are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood	
	storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems.	
	Wetland drains to a river or stream that has flooding problems	Multiplier
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	
	Other	
	YES multiplier is 2 INO multiplier is 1	
	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>record score on p.1 of field form</i> .	

R	Riverine Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
	 R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 1/3 area of wetland	Figure 🗌
	 Depressions cover > 1/10 area of wetland	0
	R 1.2 Characteristics (cover) of the vegetation in the unit (area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes):	Figure 🗌
	 Forest or shrub > 2/3 the area of the wetland	5
	Total for R1 Add the points in the boxes above	5
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Wetland intercepts groundwater within the Reclamation Area Untreated stormwater flows into wetland Tilled fields or orchards within 150 ft. of wetland Water flows into wetland from a stream or culvert that drains developed areas, residential areas,	
	 farmed fields, roads, or clear-cut logging Residential or urban areas are within 150 ft. of wetland The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. 	Multiplier
	Other	1
	YES multiplier is 2 X NO multiplier is 1	
•	YES multiplier is 2 NO multiplier is 1 <u>TOTAL</u> - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form.	<u>5</u>
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then <i>record score on p.1 of field form</i> . HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.	
• R 3	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion?	<u>5</u> (see p.47)
◆ R 3	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is 1/2 to < 1 points = 4 • If the ratio is 1/4 to < 1/2 points = 2 • If the ratio is < 1/4 points = 1	
◆ R 3	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more . points =10 • If the ratio is 1/2 to < 1 . points = 4 • If the ratio is 1/4 to < 1/2 . points = 1 • If the ratio is < 1/4 . points = 1 • If the ratio is < 1/4 . points = 1	(see p.47) Figure [] 1
◆ R 3	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is 1/2 to < 1 points = 4 • If the ratio is 1/4 to < 1/2 points = 2 • If the ratio is < 1/4 90% cover at person height. This is not Cowardin vegetation classes): • R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): • • Forest or shrub for more than 2/3 the area of the wetland • Points = 4 points = 6 • • Forest or shrub for > 1/3 area OR herbaceous plants > 1/3 area points = 4 points = 4 •	(see p.47) Figure 🗌
◆ R 3	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more • If the ratio is 1/2 to < 1 • If the ratio is 1/4 to < 1/2 • If the ratio is 1/4 to < 1/2 • If the ratio is 1/4 to < 1/2 • If the ratio is 2/3 to < 1 • If the ratio is 1/4 to < 1/2 • If the ratio is 2/3 to < 1 • If the ratio is 1/4 to < 1/2 • If the ratio is 1/4 to < 1/2 • If the ratio is < 1/4 • Points = 4 • Points = 5 • Forest or shrub for more than 2/3 the area of the wetland • Forest or shrub for > 1/3 area QR herbaceous plants > 2/3 area	(<i>see p.47</i>) Figure □ 1 Figure □ 2
◆ R 3	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. If the ratio is 2 or more points = 10 If the ratio is 1/2 to < 1 points = 8 If the ratio is 1/2 to < 1. points = 1 If the ratio is 1/4 to < 1/2 points = 2 If the ratio is 4 1/4. points = 1 R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub" (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes): Forest or shrub for more than 2/3 the area of the wetland points = 6 Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 0 Vegetation does not meet above criteria points > 1/3 area points = 0	(see p.47) Figure □ 1 Figure□
◆ <u>R 3</u> <u>R 4</u>	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more • If the ratio is 1/2 to < 1 • If the ratio is 1/2 to < 1 • If the ratio is 1/4 to < 1/2 • points = 4 • If the ratio is < 1/4 to < 1/2 • points = 10 • points = 4 • If the ratio is < 1/4 to < 1/2 • If the ratio is < 1/4 to < 1/2 • Points = 4 • If the ratio is < 1/4 to < 1/2 • Points = 4 • If the ratio is < 1/4 to < 1/2 • Points = 4 • If the ratio is < 1/4 to < 1/2 • Points = 4 • Forest or shrub for more than 2/3 the area o	(<i>see p.47</i>) Figure □ 1 Figure □ 2
	TOTAL – Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 10 • If the ratio is between 1 and < 2. points = 8 • If the ratio is 1/2 to < 1. points = 4 • If the ratio is 1/2 to < 1. points = 1 • If the ratio is 1/4 to < 1/2. points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 1 • If the ratio is < 1/4. points = 5 • Forest or shrub for more than 2/3 the area of the wetland points = 6 • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area points = 2 • Forest or shrub for > 1/3 area OR herbaceous plants > 1/3 area points = 2 • Vegetation does not meet above criteria	(see p.47) Figure □ 1 Figure □ 2 3
	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form. HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation. Does the wetland have the potential to reduce flooding and erosion? R 3.1 Amount overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland / width of stream. • If the ratio is 2 or more points = 8 • If the ratio is 1/2 to < 1 points = 2 • If the ratio is 1/2 to < 1. points = 1 • If the ratio is 1/2 to < 1. points = 1 • If the ratio is 1/4 to <1/2 points = 2 • If the ratio is 1/4 to <1/2 points = 1 • Forest or shrub for more than 2/3 the area of the wetland points = 6 • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area points = 2 • Vegetation does not meet above criteria points = 2 • Vegetation does not meet above criteria Add the points in the boxes above Does the wetland have the opportunity to reduce flooding and erosion? Acrial photo or map showing polygons of different vegetation types Total for R3 Add the points in the boxes above Do	(see p.47) Figure □ 1 Figure □ 2 3 (see p.50)

L	Lake-fringe Wetlands	Points (only 1 score	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		
L 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.52)	
	 L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33 ft. (10m) wide points = 6 Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 Map of Cowardin classes with widths marked 	Figure 🗌	
	 L 1.2 Characteristics of the vegetation in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed. Herbaceous plants cover > 90% of the vegetated area		
	 Herbaceous plants cover > 2/3 of the vegetated area		
	Total for L1Add the points in the boxes above		
L 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the	(see p.53)	
	 wetland to the lake is polluted. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Wetland is along the shores of a lake or reservoir that does not meet water quality standards Grazing in the wetland or within 150 ft Untreated stormwater flows into the wetland Tilled fields or orchards within 150 ft. of wetland Powerboats with gasoline or diesel engines use the lake Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) Other YES multiplier is 2 		
	TOTAL – Water Quality FunctionsMultiply the score from L1 by the multiplier in L2.		
_	Record score on p.1 of field form.		
1.0	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.	(
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion? L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>):	(see p.54)	
	 Average windth and characteristics of vegetation along the takeshole (<i>to not include uquality bed</i>). (<i>choose the highest scoring description that matches conditions in the wetland</i>) > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide		
L 4			
	Are there features along the shore that will be impacted if the shoreline erodes? Note which of the following conditions apply. There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. Other YES multiplier is 2 NO multiplier is 1		
	TOTAL – Hydrologic Functions Multiply the score from L3 by the multiplier L4.		
	Record score on p.1 of field form.		

S	S Slope Wetlands			
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)		
S 1				
	 S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)			
	 Slope is 5% or greaterpoints = 0 S 1.2 The soil 2 inches below the surface is clay or organic, or smells anoxic (use NRCS definitions of soil types). YES = 3 points NO = 0 points 			
	 S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit			
	 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > 1/2 of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons 			
	Total for S 1Add the points in the boxes above	(see p. 58)		
S 2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.			
	Grazing in the wetland or within 150 ft Wetland is a groundwater seep within the Reclamation Area Untreated stormwater flows through the wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1			
٠	TOTAL– Water Quality FunctionsMultiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.			
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.			
S 3	Does the wetland unit have the potential to reduce flooding and stream erosion?	(see p.59)		
	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows. Dense, uncut, rigid vegetation > 1/2 - 90% area of unit			
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points			
	Total for S3Add the points in the boxes above			
S 4	Does the wetland unit have the opportunity to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field. Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources fro flooding or excessive and/or erosive flows. Note which of the following conditions apply. Wetland has surface runoff that can cause flooding problems downgradient	Multiplier		
	YES multiplier is 2 NO multiplier is 1			
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4. <i>Record score on p.1 of field form.</i>			

Comments: _____

These questions apply to wetlands of all HGM classes.			
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)		
	 H 1.1 Categories of Vegetation structure: Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres. Aquatic bed 	Figure 🗌	
	 Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover Emergent plants >12 - 40 inches (30 - 100cm) high are the highest layer with > 30% cover Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Add the number of vegetation types that qualify. If you have: 4 -6 typespoints = 3 3 typespoints = 2 1 typepoints = 0 Map of Cowardin vegetation classes and areas with different heights of emergents 	1	
	H 1.2 Is one of the vegetation types "aquatic bed?" (see $p.64$)	0	
	YES = 1 point NO = 0 points H 1.3 Surface Water (see p. 65) H1.3.1 Does the unit have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? Note: answer YES for Lake-fringe wetlands. YES = 3 points & go to H 1.4 NO = go to H 1.3.2	Figure 🗌	
	H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?	0	
	YES = 3 points \boxtimes NO = 0 pointsMap showing areas of open water		
	H 1.4 <u>Richness of Plant Species</u> (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: >9 species points = 2 4 - 9 species points = 1 < 4 species below if you wish: # of species <u>6</u>	1	
	 H 1.5 Interspersion of Habitats (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. 	Figure 🗌	
	None = 0 points $Low = 1$ point $Moderate = 2$ points Moderate = 2 points Moderate = 2 points Moderate = 2 points High = 3 points Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always "high". Use maps from H 1.1 and H 1.3	1	

	H 1.6	 Special Habitat Features (see p. 68) Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column. □ Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream □ Cattails or bulrushes are present within the unit □ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge □ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity □ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) 	1
	Deeg t	H 1 TOTAL Score – potential to provide habitat Add the scores in the column above	4 (only 1 score
n 2	H 2 Does the wetland have the opportunity to provide habitat for many species? H 2.1 Buffers (see P. 71):		
		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". Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer. 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference	Figure □ 3
	H 2.2	Wet Corridors (see p. 72) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water flowing water throughout most of the year (> 9 months/yr?) (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream 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 unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? □ YES = 2 points (go to H 2.3) H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)? □ YES = 1 point	1

Comments: _____

•	Total Score for Habitat FunctionsAdd the points for H 1, H 2 and H 3; and record the result on p. 1	<u>14</u>			
	H 3.1 Indicator of reduced habitat functions (see p. 75) Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? Note: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers. YES = 5 points NO = 0 points	Points will be subtracted 0			
H 3					
	H 2 TOTAL Score – opportunity for providing habitat Add the scores in the columns above	10			
	• Does not meet any of the four criteria above				
	• There is at least 1 wetland within 1/2 mile points = 1	2			
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed points = 2				
	paved roads, fill, fields, heavy boat traffic or other development				
	lake shore without heavy boat traffic are OK, but connections should NOT be bisected by				
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a				
	reservoirs.) points = 5				
	(Generally, this means outside boundaries of reclamation areas, irritation district, or				
	• The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures.				
	H 2.4 <u>Landscape</u> : Choose the one description of the landscape around the wetland that best fits. (see p. 76)				
L	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)				
	If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points	4			
	diameter at the largest end, and > 6 m (20 ft) long.				
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > $30 \text{ cm} (12 \text{ in})$ in eastern Washington and are > $2 \text{ m} (6.5 \text{ ft})$ in height. Priority logs are > $30 \text{ cm} (12 \text{ in})$ in				
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay				
	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.				
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.				
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.				
	provide functional life history requirements for instream fish and wildlife resources.				
	 definition will be developed later in Fall 2008. (<i>check WDFW web site</i>) Instream: The combination of physical, biological, and chemical processes and conditions that interact to 				
	Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A				
	terrestrial ecosystems which mutually influence each other.				
	 conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and 				
	Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a				
	oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>). Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>)				
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the				
	snags, and quantity of large downed material is generally less than that found in old-growth.				
	growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. Mature: Stands $80 - 160$ yrs old. Decay, decadence, numbers of				
	Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old-				
	bunchgrasses, or a combination of both (full description of species found here in WDFW PHS report p. 153).				
	fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>). Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial				
	Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native				
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).				
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections to the habitats can be disturbed.</i>				
	priority habitats, and the counties in which they can be found, in the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u>).				
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW				

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

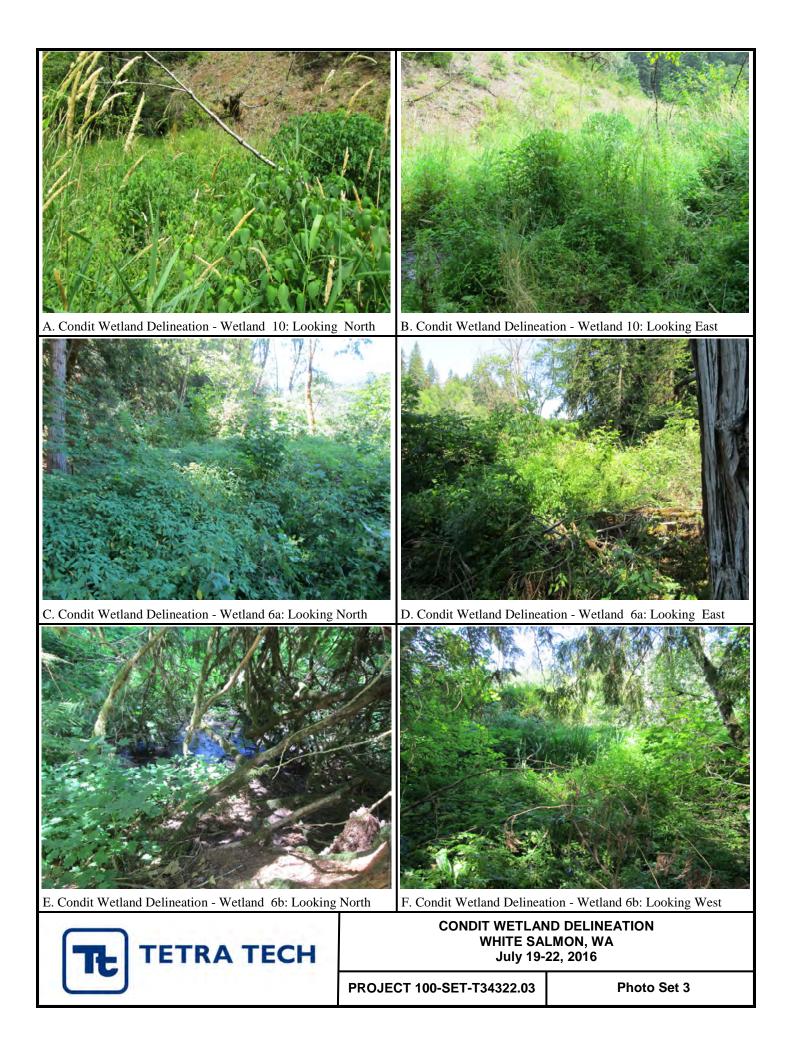
I		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criter	ria are met.		
ļ	SC1				
ľ	SC1 Is the wetland unit less than 4,000 ft^2 , and does it meet at least two of the following criteria?				
		Its only source of water is rainfall or snowmelt from a small contributing basin and has no			
		groundwater input.			
		Wetland plants are typically present only in the spring; the summer vegetation is typically upland			
		annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a			
		vernal pool.			
		The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer			
		such as basalt or clay.			
		Surface water is present for less than 120 days during the "wet" season.			
		YES = Go to SC 1.1 NO not a vernal pool			
ŀ		SC 1.1 Is the vernal pool relatively undisturbed in February and March?			
		$\Box YES = Go to SC 1.2 \qquad \qquad$			
ŀ		characteristics			
		SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other	🗌 Cat. II		
		wetlands, rivers, lakes etc.)?	🗌 Cat. III		
ļ		$\square \textbf{ YES} = Category II \qquad \qquad \blacksquare \textbf{ NO} = Category III$			
	SC2	Alkali wetlands (see p.81)			
Does the wetland unit meet one of the following two criteria?					
		The wetland has a conductivity $> 3.0 \text{ mS/cm}$.			
		The wetland has a conductivity between $2.0 - 3.0$ mS, and more than 50% of the plant cover in the			
	wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali				
	systems).				
		If the wetland is dry at the time of your field visit, the central part of the area is covered with a			
		layer of salt.			
		OR does the wetland meet two of the following three sub-criteria?			
		Salt encrustations around more than 80% of the edge of the wetland.			
		\Box More than 3/4 of the plant cover consists of species listed on Table 2.			
		A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands			
		may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I		
		YES = Category I \square NO – not an alkali wetland			
	SC3	Natural Heritage Wetlands (see p. 82)			
ſ	~~~~	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as			
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or			
		Sensitive plant species.			
	SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a natural heritage wetland?				
	(This question is used to screen out most sites before you need to contact WNHP/DNR.)				
		S/T/R information from Appendix D or accessed from WNHP/DNR web site			
	YES Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO \square				
SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state					
threatened or endangered plant species?			Cat. I		
		\square YES = Category 1 \square NO – not a natural heritage wetland			

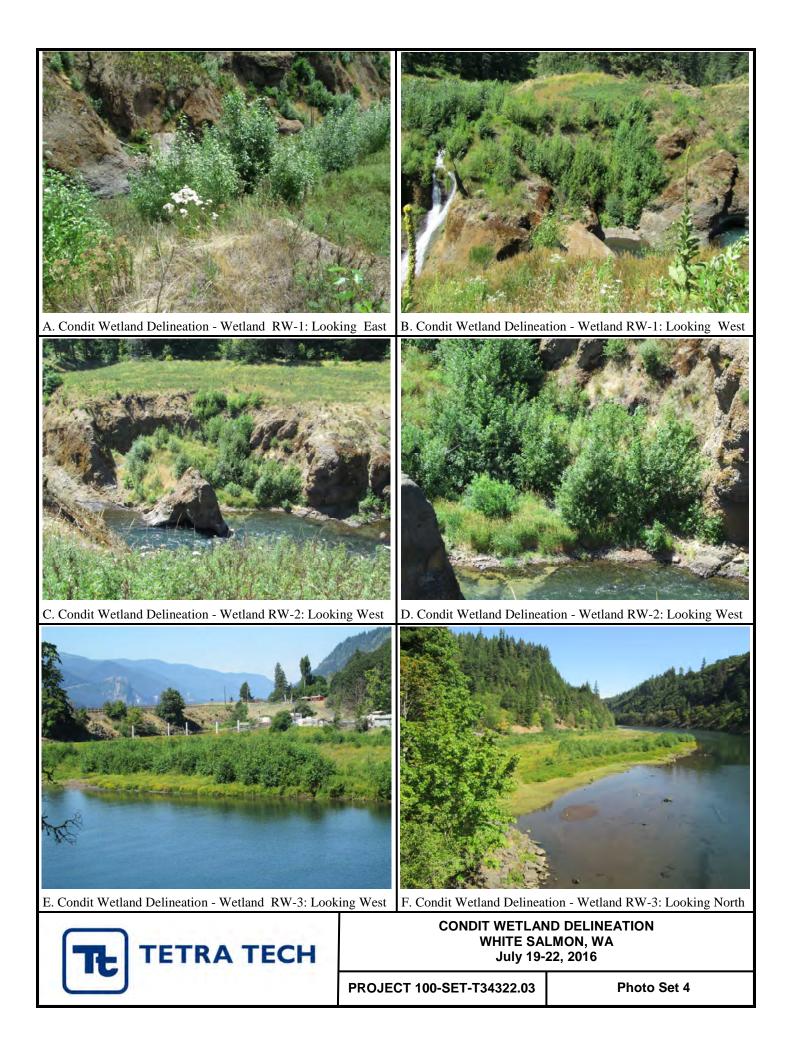
SC4	Bogs (see p. 82)			
Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegeta				
in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need				
	rate the wetland based on its functions.			
	SC 4.1 Does the wetland 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.)			
	$\square YES = go to SC 4.3 \qquad \square NO = go to SC 4.2$			
	SC 4.2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over			
	bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake			
	SC 4.3 Does the wetland have more than 70% cover of mosses at ground level in any area within its boundaries,			
	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 = Category I bog NO = go to question 4.4			
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that			
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less			
	than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.			
	SC 4.4 Is the unit, or any part of it, 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	Cat. I		
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?			
$\square YES = Category 1 bog \square NO$				
~~-				
SC5	Forested Wetlands (see p. 85)			
	Does the wetland unit have an area of forest (you should have identified a forested class, if present, in			
question H 1.1) rooted within its boundary that meet at least one of the following three criteria?				
	The wetland is within the "100 year" floodplain of a river or stream. \square			
	Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the "woody" vegetation.			
	(Dominants means it represents at least 50% of the cover of woody species, co-dominant means it			
	represents at least 20% of the total cover of woody species.)			
	There is at least 1/4 acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-			
	growth" according to the definitions for these priority habitats developed by WDFW (see p. 83).			
	\boxtimes YES = got o SC 5.1 \square NO – not a forested wetland with special characteristics			
	SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow			
	growing native trees? Slow growing trees are: western red cedar (Thuja plicata), Alaska yellow cedar			
	(Chamaecyparis nootkatensis), pine spp. mostly "white" pine (Pinus monticola), western hemlock	Cat. I		
	(Tsuga heterophylla), Englemann spruce (Picea engelmannii)?			
	\square YES = Category I \square NO = go to SC 5.2			
	SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species?	C (I		
		Cat. I		
	$\square \textbf{YES} = Category I \qquad \square \textbf{NO} = go to SC 5.3$			
	SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast			
	growing species? Fast growing species are: Alders – red (alnus rubra), thin-leaf (A. tenuifolia);			
	Cottonwoods – narrow-leaf (Populus angustifolia), black (P. balsamifera); Willows – peach-leaf (Salix			
	amygdaloides), Sitka (S. sitchensis), Pacific (S. lasiandra), Aspen – Populus tremuloides), Water Birch			
	(Betula occidentalis)			
	\boxtimes YES = Category II \square NO = go to SC 5.5			
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?	Cat. II		
	\square YES = Category II			
	Category of wetland based on Special Characteristics			
	Choose the "highest" rating if wetland falls into several categories.	TT		
	If you answered NO for all types enter "Not Applicable" on p. 1	<u>II</u>		

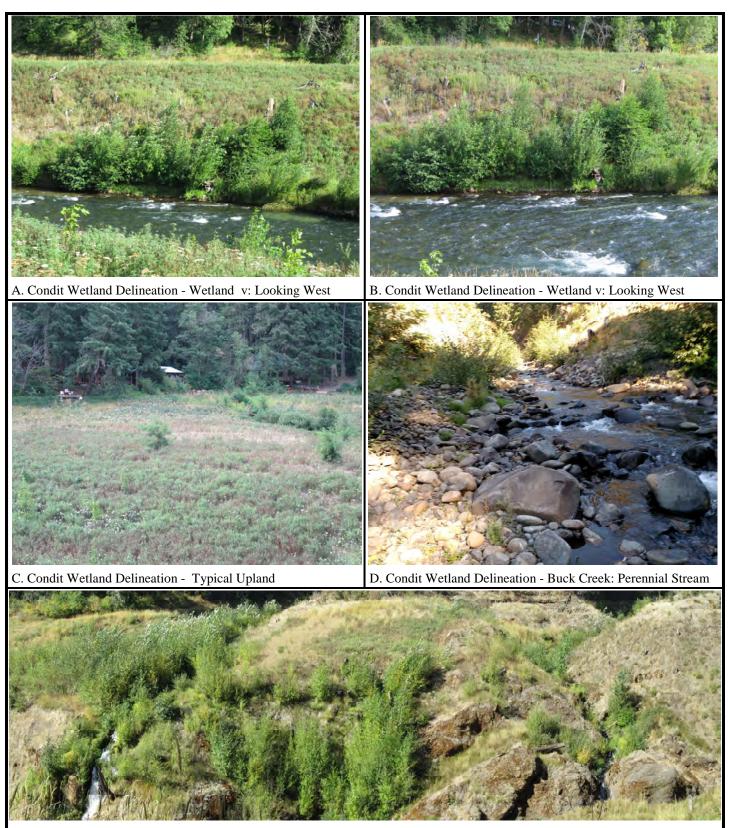
Appendix C – Photo Sets











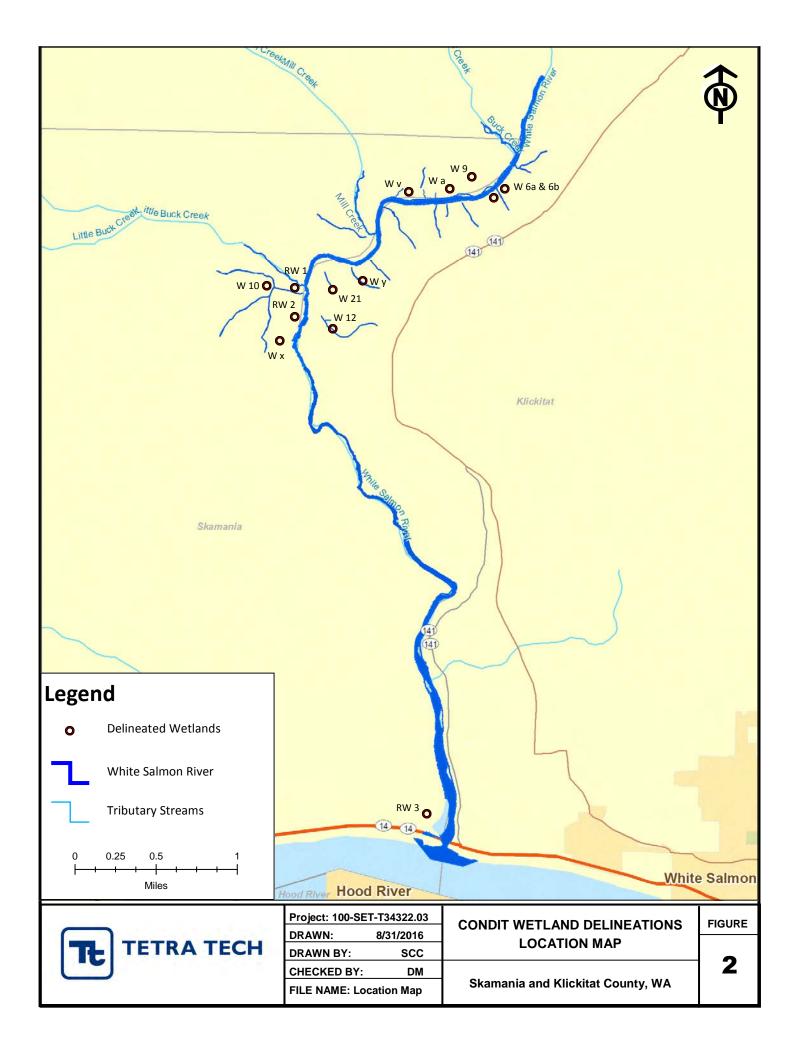
E. Condit Wetland Delineation - Spring and Little Buck Creeks Illustrating Natural Cottonwood Recruitment



CONDIT WETLAND DELINEATION WHITE SALMON, WA July 19-22, 2016

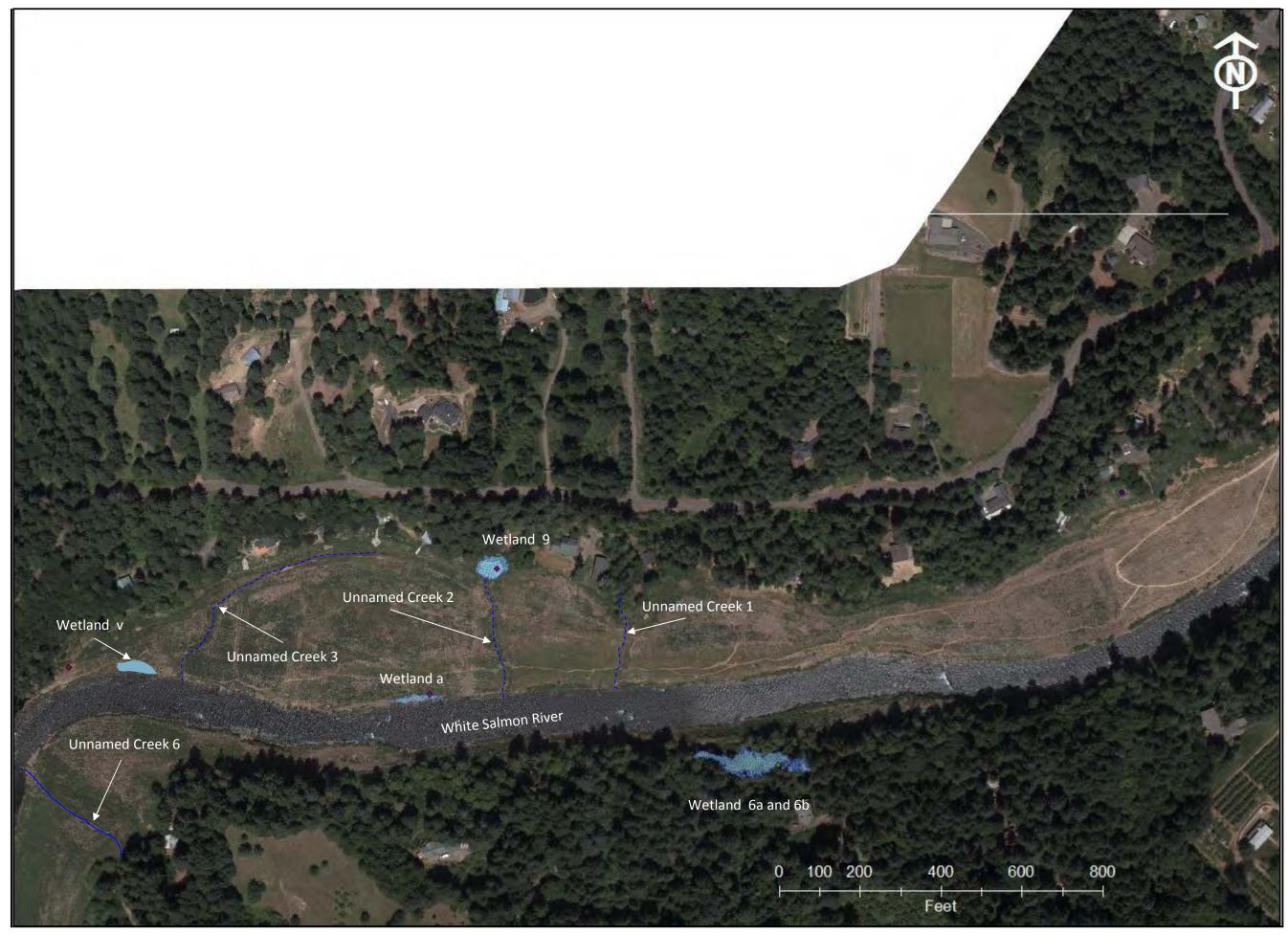
PROJECT 100-SET-T34322.03

Appendix D – Map Sheet Figures

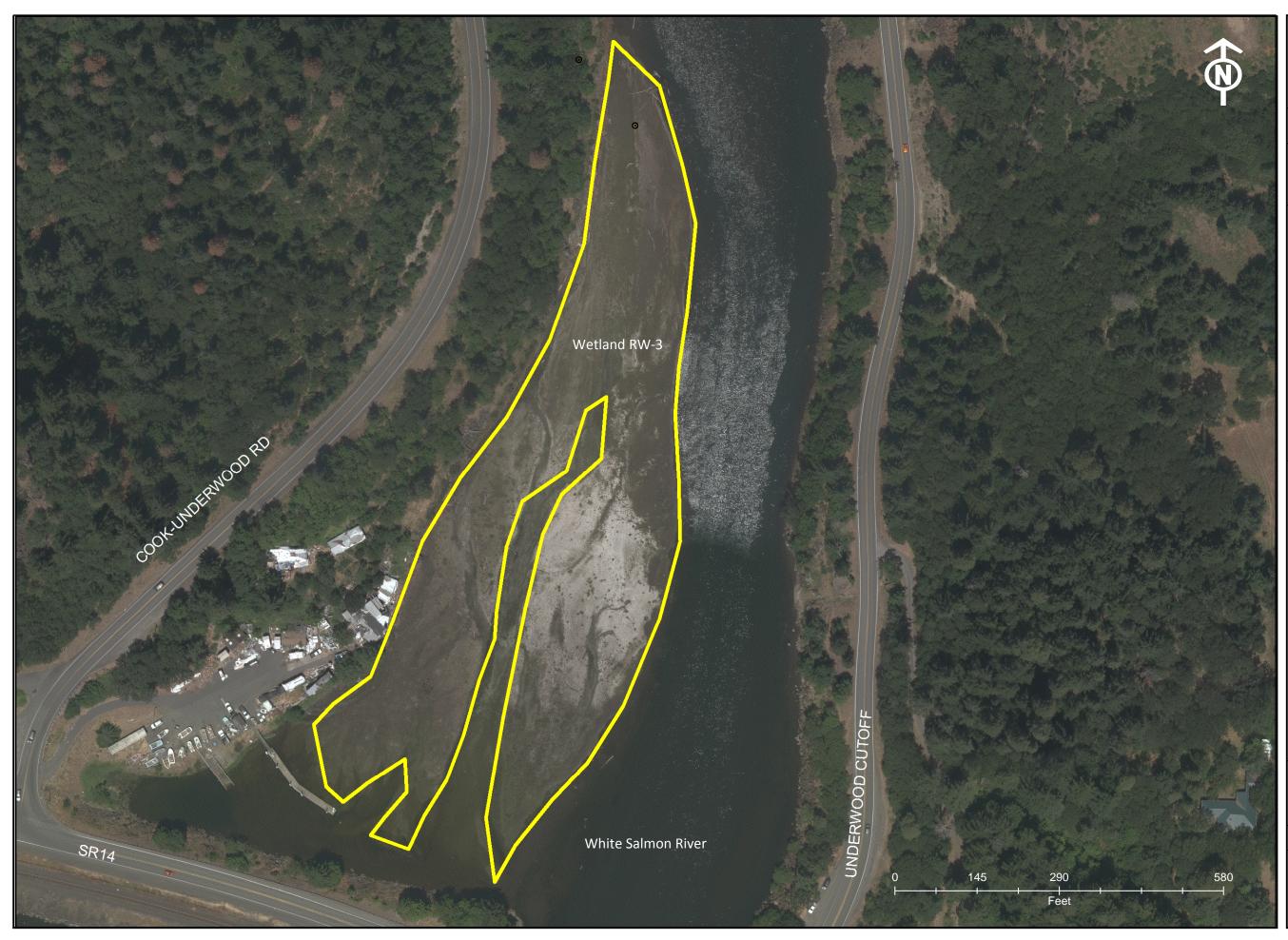




Condit 2016 Wetland Delineation Figure 3 Locations 1 and 2 Wetlands 10,12,21,x,y, RW-1, RW-2 Legend Soil Sample Points 2016 Wetlands Perennial Streams L _ _ Intermittent Streams Wetland Location CONDIT HYDROELECTRIC PROJECT DECOMMISSIONING WHITE SALMON, WA 100-SET-T34322.03 TETRA TECH TŁ



Condit 2016 Wetland Delineation Figure 4 Location 5 Wetlands 6a, 6b,9,a,v Legend Soil Sample Points 2016 Wetlands Perennial Streams ______ Intermittent Streams Wetland Location CONDIT HYDROELECTRIC PROJECT DECOMMISSIONING WHITE SALMON, WA Project 100-SET-T34322.03 TETRA TECH TŁ



Condit 2016 Wetland Delineation Figure 5 In-lieu Site Wetland RW-3 Legend Streams 2014 Delineated Wetlands \odot Soil Sample Points Wetland Location CONDIT HYDROELECTRIC PROJECT DECOMMISSIONING WHITE SALMON, WA Project: 100-SET-T34322.03 TETRA TECH TŁ

Appendix E – WETS Climate Data

USDA Field Office Climate Data

WETS Station : SNOWDEN, WA7794 Creation Date: 09/20/2016 Latitude: 4549 Longitude: 12121 Elevation: 02415 State FIPS/County(FIPS): 53039 County Name: Klickitat Start yr. - 1971 End yr. - 2000 _____ Precipitation (Inches) Temperature (Degrees F.) _____ 30% chance |avg | will have |# of| avg |-----|-----| |-----|days| total| avg | avg | avg | avg | less | more | w/.1 | snow Month | than | than | or | fall | daily | daily | max | min | more _____ _ _ _ _ _ _ _ _ _ January February March April May June July August September | October November December _____ Annual -----|-----|-----| _____ ____ ____ _____ Average _ _ ____ ____|__ ____|_____|____ _ _ Average | --| _____ ____ | _____| _____

GROWING SEASON DATES

Probability	24 F or higher	28 F or higher	32 F or higher
		inning and Ending D rowing Season Leng	
50 percent *			
70 percent *			

_____ * Percent chance of the growing season occurring between the Beginning and Ending dates. total 2010-2016 prcp Station : WA7794, SNOWDEN Unit = inches _____ yr jan feb mar apr may jun jul aug sep oct nov dec annl ___ 10 M0.02 M2.32 1.91 0.00 0.37 1.77 M3.14 M4.65 9.16 23.34 11M4.15 1.97 M6.53 M4.73 M3.32 M0.30 M0.56 0.06 M0.16 M2.95 M3.75 M4.96 33.44 12M5.90 M2.81 M12.09 M0.74 M1.49 M2.42 M0.00 M0.01 M0.00 M5.32 M5.98 M8.49 45.25 13 0.97 M2.12 M2.44 M2.05 M2.93 M1.41 M0.00 M1.68 M5.51 M1.83 M2.57 M0.93 24.44 14M3.21 M17.35 M13.17 M2.87 M1.91 M0.93 M0.54 1.13 0.55 M4.63 3.62 M5.14 55.05 15M3.54 M3.75 M2.22 M0.70 M1.38 M0.00 M0.34 0.38 M0.16 1.51 M6.31 M10.17 30.46 16 6.33 7.37 M5.27 0.51 M0.46 M0.77 M0.36 M0.04 M0.36 21.47 _____

Product generated by ACIS - NOAA Regional Climate Centers.

USDA Field Office Climate Data

Latitude: 4560 Longitude: 12132 Elevation: 01950 State FIPS/County(FIPS): 53039 County Name: Klickitat Start yr. - 1971 End yr. - 2000

Creation Date: 09/20/2016

	Temperature (Degrees F.)			Precipitation (Inches)				
	 	 	 		30% ch will		avg # of days	avg tota
Month	avg daily max	avg daily min	avg	avg	less than	more than	w/.1 or more	snow fall
January	37.9	24.0	31.0	7.10	3.70	8.68	10	19.8
February	42.3	26.6	34.5	6.15	3.81	7.43	8	15.7
March	50.0	29.5	39.8	4.67	3.06	5.60	8	6.1
April	58.2	32.8	45.5	2.53	1.37	3.12	6	1.8
May	67.1	38.6	52.9	1.50	0.86	1.85	4	0.0
June	74.4	44.2	59.3	1.06	0.50	1.30	3	0.0
July	82.6	48.6	65.6	0.43	0.06	0.51	1	0.0
August	82.5	47.6	65.1	0.72	0.02	0.79	2	0.0
September	74.0	41.3	57.7	1.49	0.35	1.82	3	0.0
October	61.2	34.4	47.8	3.21	1.17	3.87	5	0.2
November	44.5	30.2	37.4	7.19	4.44	8.70	11	8.5
December	36.7 	24.9	30.8	7.34	4.22	8.93	10 	17.9
Annual	 	 	 	 	37.21	48.31	 	
Average	59.3	35.2	47.3					
Average				43.39			 57	65.2

GROWING SEASON DATES

	Temperature						
Probability	24 F or higher	28 F or higher	32 F or higher				
	-	Dates ch					
50 percent *		5/15 to 9/28 135 days	6/6to9/12 97days				
70 percent *		5/ 8 to 10/ 5 149 days	5/30 to 9/19 111 days				

_____ * Percent chance of the growing season occurring between the Beginning and Ending dates. total 1909-2016 prcp Station : WA5659, MT ADAMS RS Unit = inches _____ yr jan feb mar apr may jun jul aug sep oct nov dec annl ___ 9 M2.20 3.20 5.40 10 6.15 M0.00 6.15 11 12 13 M1.82 1.82 14 15 16 17 18 19 20 21 22 23 0.22 1.12 0.00 0.15 1.89 4.67 6.17 M2.20 24 16.42 25M8.30 10.09 1.57 2.48 1.09 0.58 0.00 0.04 1.60 0.20 5.41 M6.40 37.76 26 3.22 M8.96 0.44 M1.10 2.46 M0.03 0.00 0.78 2.21 5.35 9.94 6.38 40.87 27 8.58 M11.09 2.41 1.74 2.69 0.52 0.00 0.21 3.22 3.46 M11.38 3.95 49.25 28 8.62 1.22 11.58 4.74 0.51 1.29 0.04 M0.00 0.16 M2.87 5.78 9.27 46.08 29 4.51 1.28 2.26 M4.42 0.57 1.67 0.07 0.00 M0.17 0.68 M0.28 10.87 26.78 30 4.25 10.03 2.94 1.29 1.58 0.23 0.00 M0.00 0.54 1.82 3.57 1.91 28.16 31M8.79 2.97 M8.54 1.70 0.52 3.54 0.00 0.00 1.31 5.69 5.31 M14.57 52.94 32 7.92 4.44 7.90 4.24 1.24 0.75 0.50 0.14 0.01 3.04 11.48 6.16 47.82 3310.56 6.00 7.06 0.13 3.65 2.09 0.02 0.39 3.42 6.03 2.06 27.37 68.78 3411.22 1.80 5.92 1.20 0.77 0.11 0.00 0.75 1.37 9.55 12.75 11.88 57.32 35M6.51 M2.92 4.09 1.74 0.18 0.47 0.01 0.03 0.21 1.21 4.17 7.38 28.92

36M12.60 6.92 3.97 0.13 2.76 3.17 M0.24 M0.60 M0.64 M0.08 M0.46 M8.69 40.26 37 2.61 10.58 3.29 6.56 1.56 5.61 M0.27 0.71 M0.96 M1.29 M11.50 M14.55 59.49 38M6.12 M6.96 M8.92 M1.55 0.20 0.27 M0.43 M3.31 4.18 M6.05 37.99 39M7.86 M5.70 M3.24 M0.09 M1.59 M0.12 M0.13 M0.82 M0.20 M1.64 0.80 13.69 35.88 40 4.17 14.62 5.88 M3.62 M1.26 M0.22 M0.07 1.74 5.60 5.31 5.94 48.43 41 7.76 2.59 1.76 2.97 4.63 1.11 0.00 1.93 1.81 M2.41 6.95 13.61 47.53 42 4.24 5.96 1.11 1.82 2.06 1.88 0.30 0.13 0.00 1.86 17.40 12.17 48.93 43M7.07 5.53 6.44 M4.12 0.54 0.88 0.11 0.10 0.00 5.40 4.23 2.56 36.98 44 4.64 3.48 MO.98 1.33 MO.79 0.27 0.33 0.34 1.57 0.53 6.70 1.57 22.53 45 5.22 7.84 7.79 3.56 4.77 0.08 0.01 0.01 1.59 1.39 M12.51 11.66 56.43 46 9.31 7.59 4.10 1.72 0.71 2.62 0.84 0.00 0.53 5.41 9.50 9.69 52.02 47 6.30 5.19 4.69 2.05 0.00 0.09 0.22 2.99 10.96 2.38 M4.23 39.10 0.51 0.54 2.49 M2.91 M8.51 10.90 4810.10 8.60 M2.83 47.39 49 1.07 17.18 3.71 0.76 1.97 0.30 0.10 0.07 1.80 M2.34 9.96 M7.02 46.28 0.36 0.21 M1.13 M12.65 10.77 M8.95 5020.78 8.47 M8.79 M2.63 0.31 0.59 75.64 5112.82 7.74 M5.59 M1.00 1.93 0.39 0.00 M0.40 2.11 M8.15 M11.75 M10.01 61.89 52M9.58 4.75 2.73 0.62 0.55 1.27 0.00 0.07 0.19 0.15 M0.00 M12.01 31,92 5323.30 4.07 M4.15 2.94 2.49 M0.76 M0.00 M1.56 1.03 1.82 7.88 9.43 59.43 5416.94 7.62 3.79 4.21 0.90 1.97 M0.01 0.31 1.03 3.58 7.34 6.59 54.29 3.84 0.46 0.45 0.70 0.00 55 3.19 3.80 5.61 3.31 9.72 13.07 14.40 58.55 5615.09 5.45 8.37 0.19 0.90 M0.67 0.01 1.82 0.86 3.98 M1.23 4.39 42.96 57 3.20 3.08 M4.38 3.54 3.74 M0.12 M0.22 M0.47 0.85 M3.60 M2.21 M6.71 32.12 58M4.30 M3.01 M3.25 M5.22 M1.13 M1.92 0.00 0.00 0.44 M2.70 M8.00 M6.46 36.43 59M7.21 3.31 M4.43 1.27 0.55 1.52 0.05 0.00 3.38 4.88 M2.96 M2.38 31.94 M7.61 M5.04 3.07 0.34 0.00 0.95 0.30 2.40 M13.47 M3.95 60M3.93 41.06 61M8.05 M14.21 M9.87 M1.67 M2.22 0.59 0.28 0.98 M1.41 M4.08 M7.36 M10.25 60.97 62M1.76 M4.09 M7.37 M4.02 M2.12 M0.19 0.00 1.10 2.80 6.77 M14.56 2.34 47.12 63M1.81 M7.55 5.35 M2.86 M1.74 0.22 0.12 0.19 0.10 M4.00 M8.82 4.79 37.55

64M14.05 M0.48 2.94 0.61 0.20 2.20 0.55 1.09 0.78 1.08 M7.90 M14.88 46.76 65M9.94 M1.27 1.50 3.05 M1.30 0.30 1.09 0.90 0.03 M0.98 M7.44 M6.75 34.55 66M13.23 2.17 M8.28 M0.92 M0.52 M0.30 0.83 0.00 0.45 M2.90 M7.33 M11.58 48.51 67M11.69 M2.78 M4.72 2.11 0.09 0.69 0.00 0.00 0.47 M7.31 M4.93 M6.94 41.73 68M9.67 M11.82 M3.64 0.47 1.07 M1.69 0.13 3.74 1.79 5.96 7.95 10.47 58 40 69M15.20 4.85 1.76 1.62 1.58 1.45 0.00 0.03 2.33 2.38 2.59 M9.66 43.45 70M9.30 3.08 M2.94 1.82 0.04 0.46 0.00 0.00 0.74 3.98 9.13 M13.81 45.30 71M10.10 4.62 11.96 2.17 0.69 1.35 0.00 0.18 1.78 M3.58 5.09 M10.88 52.40 72M15.36 4.91 6.11 3.24 M1.81 0.76 0.28 0.69 M4.04 0.27 M5.85 M10.25 53 57 73 5.91 M1.45 1.59 0.51 0.54 1.11 0.00 0.00 3.33 M3.58 M13.11 M10.52 41.65 74M13.63 M5.36 5.22 3.59 1.25 0.90 0.88 0.00 0.00 M0.00 M7.52 3.96 42.31 75M10.05 8.77 4.75 1.29 1.12 0.00 M3.38 M3.13 M2.96 35.45 76 5.27 M7.85 2.58 M0.30 0.13 0.08 0.37 1.81 0.43 M1.59 0.95 M1.89 23.25 77M0.99 M2.42 4.61 0.00 1.93 1.01 0.05 1.85 3.18 M3.97 7.10 M13.33 40 44 78M6.53 M5.83 1.85 3.71 M2.29 0.20 0.62 1.39 2.08 0.07 3.43 M2.06 30.06 79M2.15 M10.36 M2.73 1.84 M0.96 0.19 1.01 3.56 1.40 6.23 2.08 3.64 36.15 80M2.01 M6.79 2.38 M2.57 M1.02 0.80 0.03 1.32 M0.25 M18.41 35.58 M7.05 M2.07 2.29 3.45 0.00 2.77 M6.90 M12.42 81 36.95 82M5.55 M15.35 M3.68 M0.77 0.01 0.27 2.83 6.01 7.83 11.39 53.69 83M9.38 M10.90 M8.53 0.56 0.97 0.67 1.55 1.56 1.80 1.07 16.88 10.56 64.43 84 1.90 4.59 M5.00 M3.87 3.48 0.75 0.04 0.00 M1.08 3.01 M11.20 M2.95 37.87 85M0.11 4.37 3.38 1.51 1.04 3.28 0.00 2.45 1.79 3.68 M4.03 2.89 28.53 86M12.10 M7.85 3.68 1.07 0.76 0.69 0.13 0.07 2.23 1.76 7.57 M3.22 41.13 87 9.15 4.28 6.87 M1.47 2.32 0.14 0.92 0.00 0.00 0.25 M3.17 M13.98 42.55 88 7.99 1.85 5.53 3.81 1.89 1.52 0.53 0.00 M0.71 M0.12 M12.55 M5.61 42.11 89M4.30 M3.84 6.68 3.17 1.45 M0.32 M0.29 1.00 0.15 3.30 M3.83 M3.98 32.31 90M12.94 6.52 2.44 2.59 2.26 M0.19 M1.15 M0.09 5.00 M4.43 M2.74 40.35 91M5.21 M6.23 4.53 3.65 1.61 M1.61 0.00 M0.14 0.00 M1.96 M7.96 M4.37 37.27

92M8.34 6.57 1.82 M4.06 0.00 0.24 2.00 3.05 4.60 M7.67 38.35 93M4.73 M0.76 M6.13 M7.01 M2.40 1.37 2.04 0.14 0.01 0.76 2.02 5.84 33.21 94M1.97 M5.44 M3.21 1.56 2.72 1.17 0.00 0.00 8.94 6.57 M5.53 37.11 95M10.66 4.94 7.65 4.26 0.68 0.80 1.47 M0.29 2.89 M10.57 M8.79 53.00 96M8.40 M6.17 4.15 M6.28 M2.51 0.35 0.49 0.09 1.23 M5.24 M6.61 M9.75 51 27 97M4.01 M1.62 M8.28 M3.60 M1.31 1.71 0.19 M1.47 M4.62 M10.63 M7.83 3.65 48.92 98M5.56 M9.94 M4.39 M1.66 M3.44 1.07 0.15 0.03 1.25 M2.43 M13.89 M11.11 54.92 99M9.76 M12.21 M7.51 M0.70 M1.22 0.15 0.12 2.41 0.05 M2.96 M11.93 M6.62 55.64 0M8.83 M4.97 M1.14 0.28 M2.18 2.41 0.00 0.00 0.86 M2.21 2.58 M2.85 28.31 1M1.57 M0.69 M0.75 M1.75 M2.51 1.72 0.43 1.13 0.33 M4.33 M8.16 M9.07 32.44 2M9.33 M3.83 M7.15 M2.48 M1.00 M1.44 0.03 0.17 M0.03 M3.64 M11.63 40.73 3M8.43 M3.02 M10.04 M2.96 M0.81 0.00 0.00 0.15 0.34 M3.07 M4.99 M4.76 38.57 4M7.70 M1.28 3.00 M0.00 M3.03 1.63 0.20 2.52 2.49 M3.06 M1.47 M3.15 29.53 5M2.04 M1.33 M5.31 M2.41 M4.13 0.77 0.28 0.00 0.68 M3.52 M6.84 M4.49 31.80 6M13.15 M2.01 M3.49 M2.53 M2.12 1.88 0.50 0.00 M0.41 M0.92 M19.80 M9.05 55.86 7M4.40 M6.15 M2.97 M1.53 M0.57 0.23 0.40 0.80 0.03 M5.13 M6.73 M11.85 40.79 8M6.39 M2.34 M3.51 M1.40 M0.88 1.34 0.05 1.12 M0.04 M2.18 M6.42 M5.08 30.75 9M4.30 M2.46 M4.54 M1.58 M4.67 0.87 0.00 M0.33 M1.27 M3.49 M9.23 M5.60 38.34 10M5.52 M5.51 6.58 M3.54 M2.39 3.26 0.00 0.13 M2.05 M2.23 M7.81 M12.55 51.57 11M5.26 M5.00 M10.14 M4.92 M3.10 M0.08 M1.97 M0.12 M0.30 M3.01 M7.83 M3.81 45.54 12M10.79 M5.72 M12.36 M2.84 M1.64 M2.57 0.15 0.00 0.00 6.15 11.34 M12.63 66.19 13 2.22 M1.85 M2.91 M3.33 M2.84 0.84 0.22 1.22 M7.26 M0.09 M4.33 M3.60 30.71 14M6.04 M11.15 M11.07 M4.04 M2.19 M0.63 M0.83 M0.98 M0.58 M8.82 M4.38 M8.05 58.76 15M4.97 M3.41 M0.04 M0.53 M1.65 M0.24 M0.00 M0.91 M0.42 4.01 M6.50 M20.38 43.06 16M10.10 M4.65 M10.12 M0.49 M1.05 M1.04 0.22 0.03 M0.23 27.93 _ _ _ _ _ _ _ _ _ _ _ _

Product generated by ACIS - NOAA Regional Climate Centers.

ATTACHMENT 2

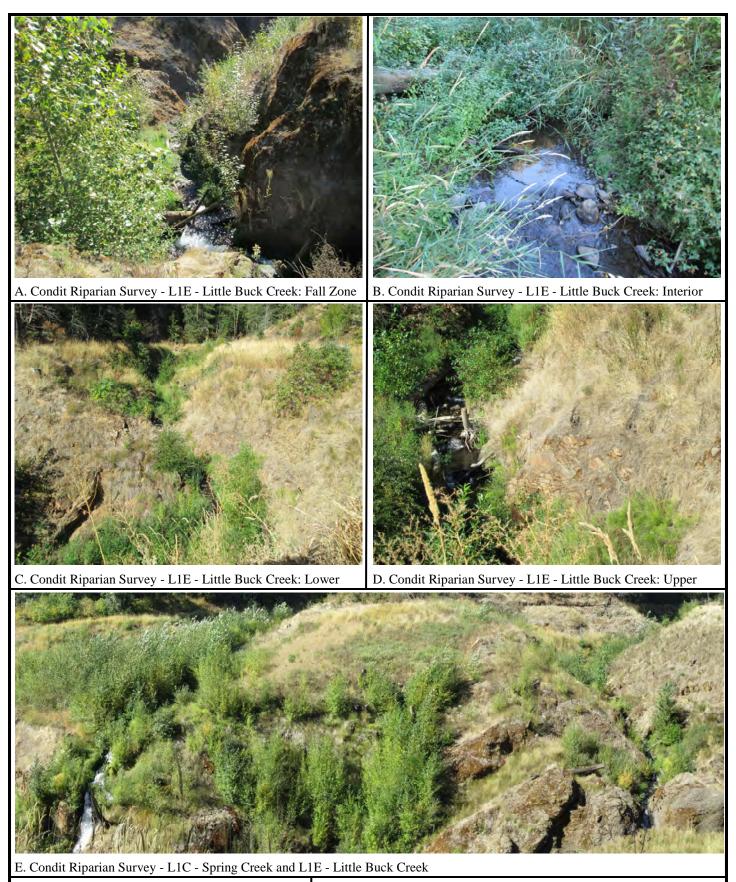
Photos of the Riparian Benches and Planting Areas



TETRA TECH

CONDIT RIPARIAN SURVEY WHITE SALMON, WA SEPTEMBER 14-15, 2016

PROJECT 100-SET-T34322.03



TETRA TECH

CONDIT RIPARIAN SURVEY WHITE SALMON, WA SEPTEMBER 14-15, 2016

PROJECT 100-SET-T34322.03

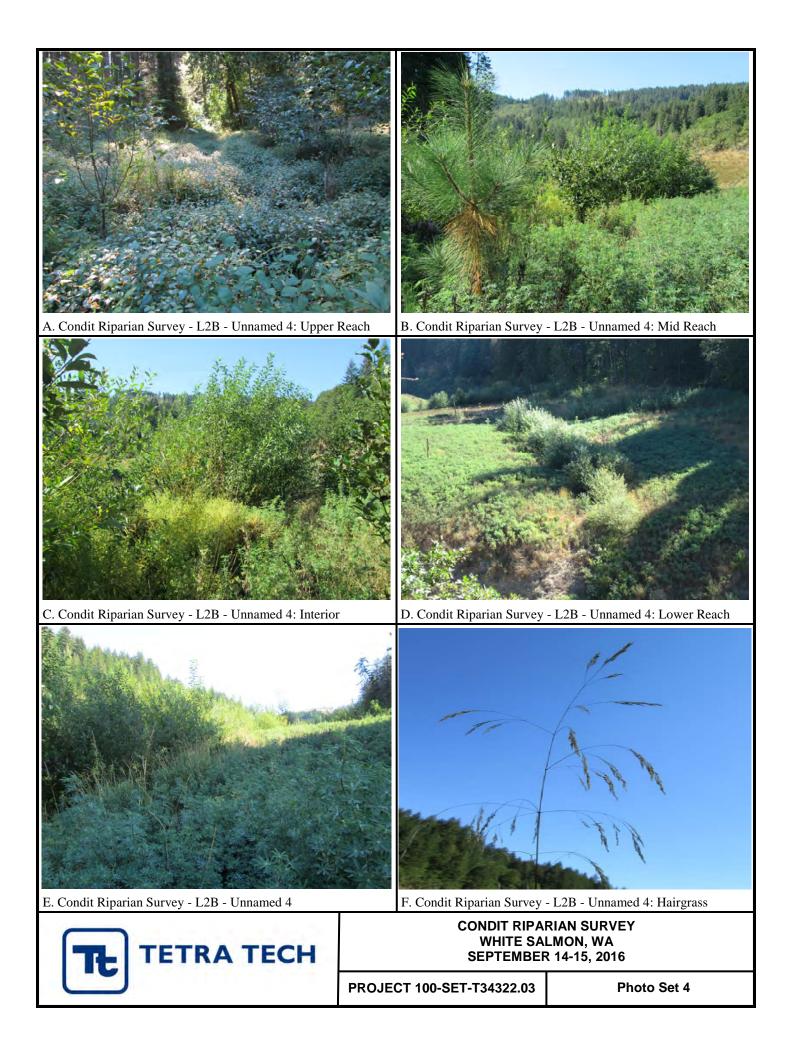


E. Condit Riparian Survey - L1G - Condit Creek



CONDIT RIPARIAN SURVEY WHITE SALMON, WA SEPTEMBER 14-15, 2016

PROJECT 100-SET-T34322.03

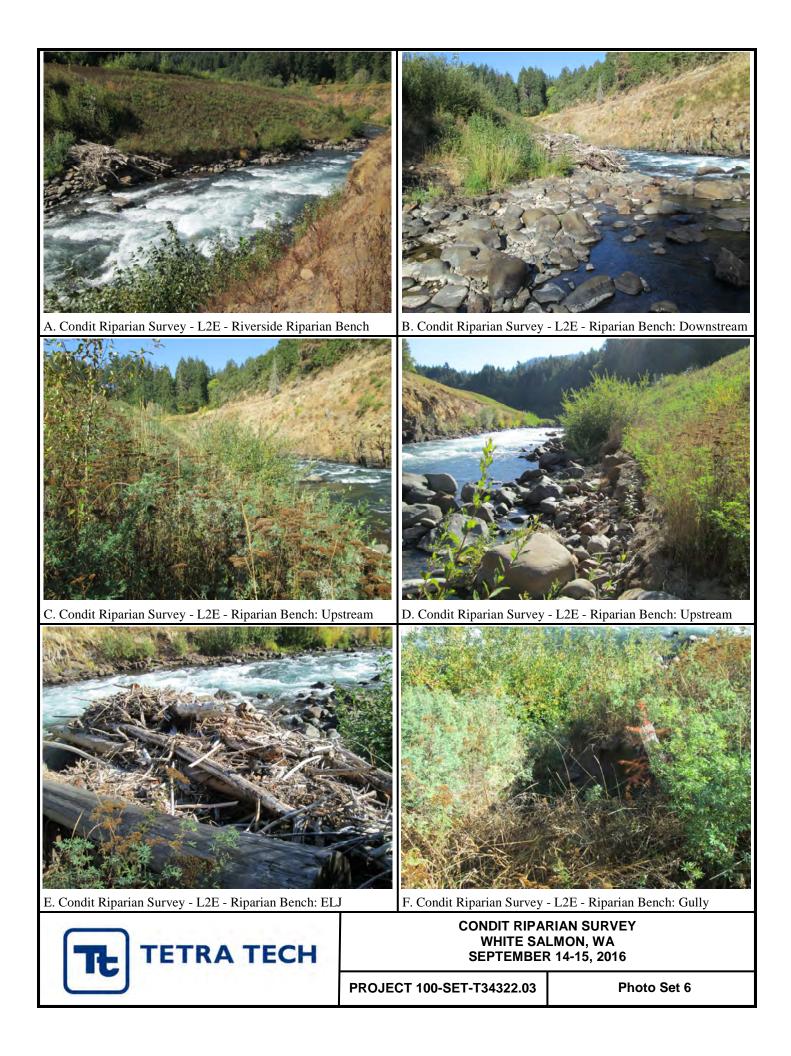






CONDIT RIPARIAN SURVEY WHITE SALMON, WA SEPTEMBER 14-15, 2016

PROJECT 100-SET-T34322.03





A. Condit Riparian Survey - L2E - Riverside Riparian Bench: 2014



B Condit Riparian Survey - L2E - Riverside Riparian Bench: 2015



C. Condit Riparian Survey - L2E - Riverside Riparian Bench: 2016



CONDIT RIPARIAN SURVEY WHITE SALMON, WA SEPTEMBER 14-15, 2016

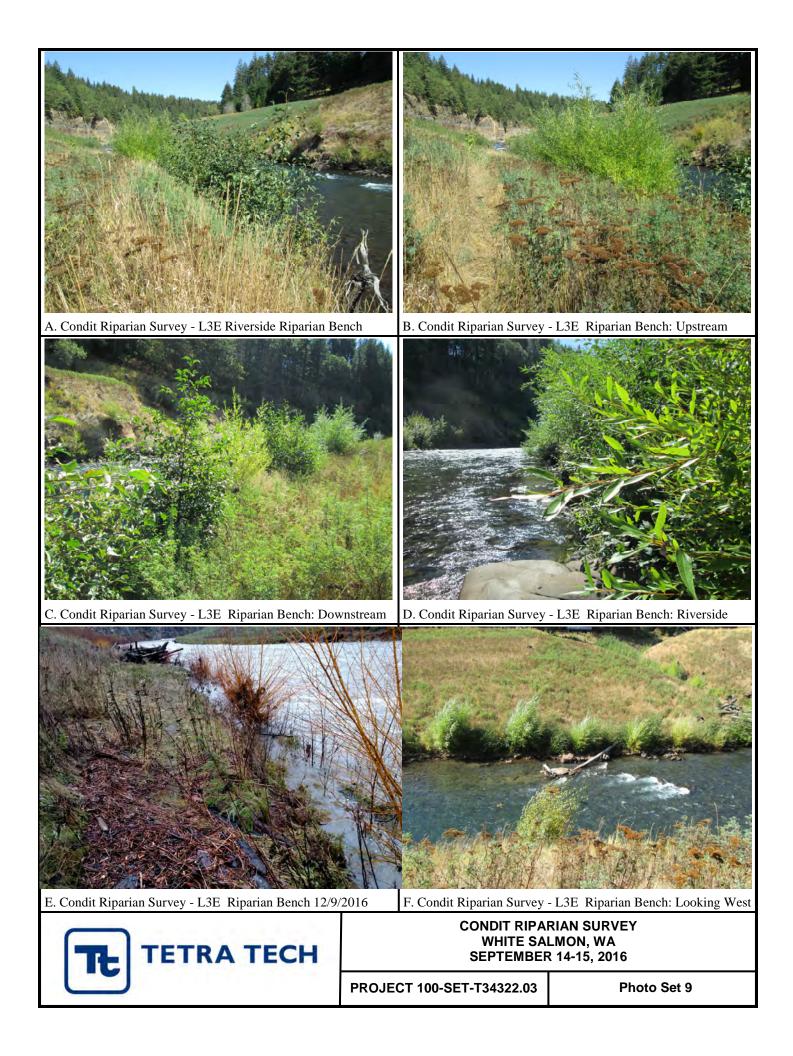
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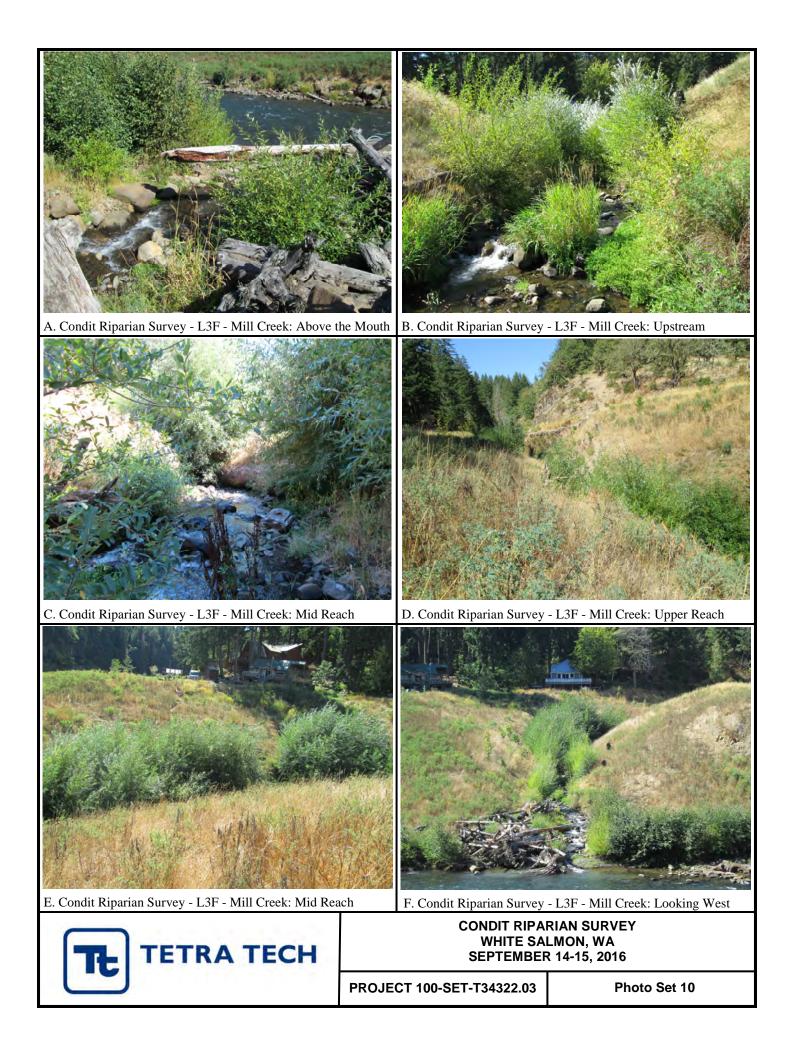




CONDIT RIPARIAN SURVEY WHITE SALMON, WA SEPTEMBER 14-15, 2016

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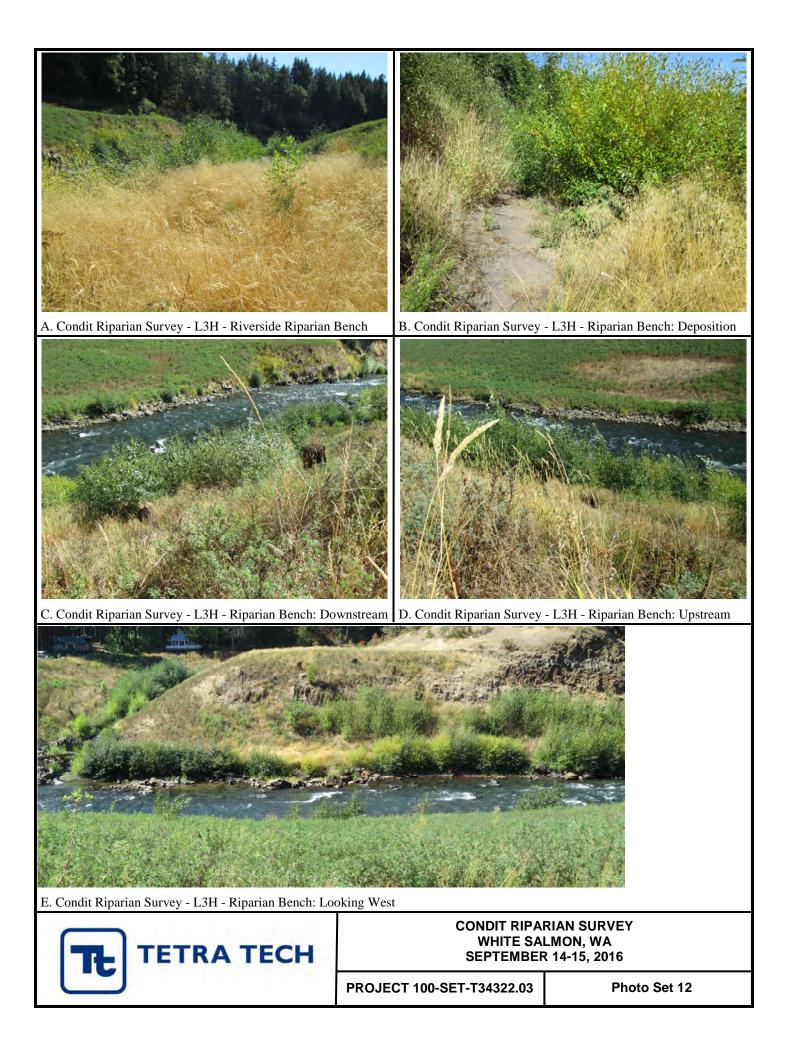


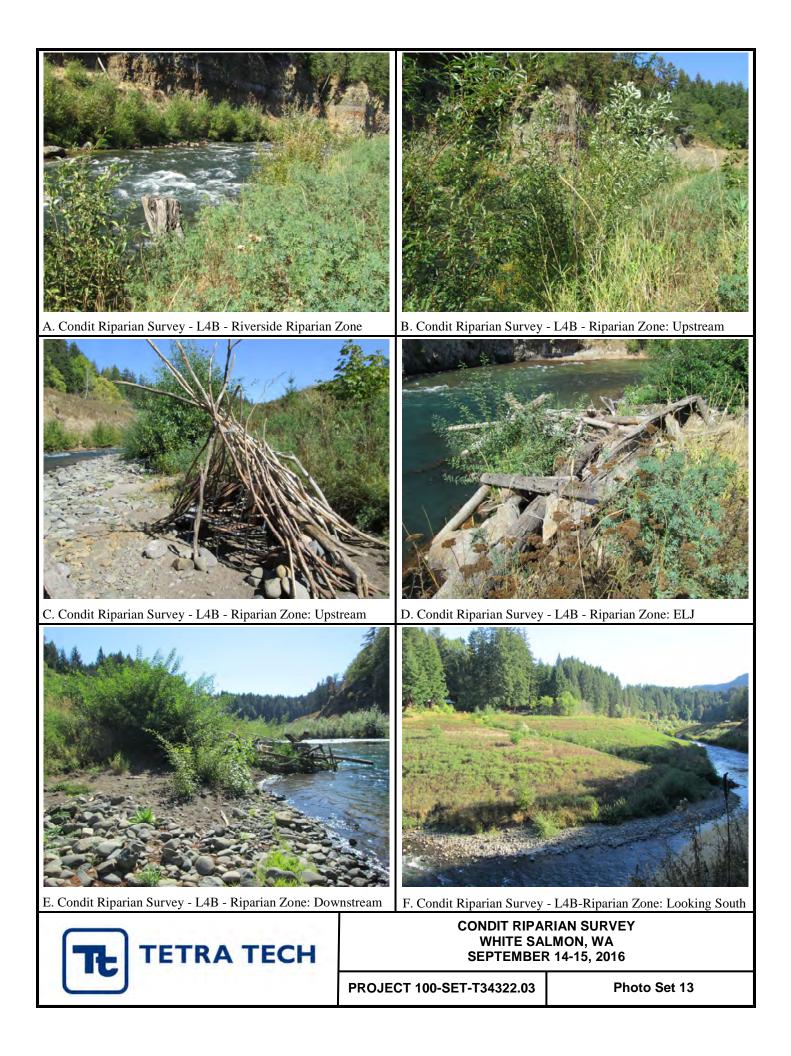




WHITE SALMON, WA SEPTEMBER 14-15, 2016

PROJECT 100-SET-T34322.03







PROJECT 100-SET-T34322.03

