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

Wetland Site Conditions Report

Applicant: PacifiCorp
Landowner: PacifiCorp
Contact: Tom Hickey, PacifiCorp (503) 813-5685

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).

Table 4-1. Wetlands delineated in the 2016 Condit Wetland Survey

Wetland Identification	Square Footage	Acres	Washington Function Rating	Cowardin Classification
W-6a	669.2	0.02	I	PFO
W-6b	7,858.1	0.18	I	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	I	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**		

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).

Figure 4-1. Locations of wetlands in the Condit project area.

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.

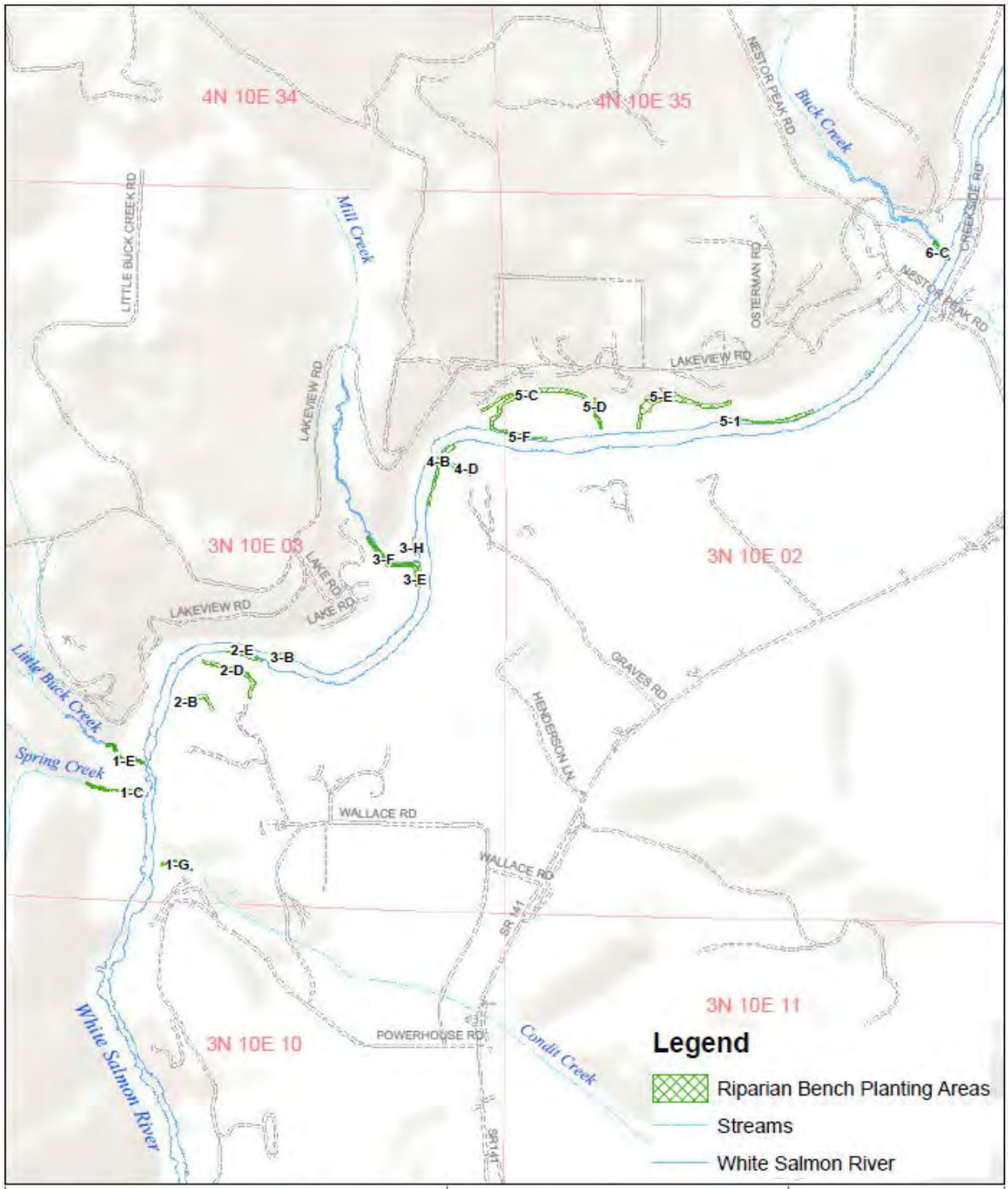
Riparian benches/planting areas:
There were approximately 3.7 acres of riparian bench where the stream banks were graded and planted to accelerate the establishment of wetland and riparian vegetation. The riparian benches are listed in Table 4-2 with their original acreage and the latest percent cover 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.

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

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					


4N 10E 34
4N 10E 35
3N 10E 03
3N 10E 02
3N 10E 11
3N 10E 10
Buck Creek
Mill Creek
Little Buck Creek
Spring Creek
White Salmon River
Condit Creek
LITTLE BUCK CREEK RD
LAKEVIEW RD
LAKE RD
NESTOR PEAK RD
OSTERMAN RD
CREEKSIDE RD
GRAVES RD
HENDERSON LN
WALLACE RD
POWERHOUSE RD
SR 141
6-C
5-C
5-D
5-E
5-1
5-F
4-B
4-D
3-F
3-H
3-E
2-E
3-B
2-D
2-B
1-E
1-C
1-G
Legend
Riparian Bench Planting Areas
Streams
White Salmon River
Figure 4-2. Locations of Riparian Bench Areas
0
0.125
0.25
0.5 Miles
Condit Decommissioning Project
White Salmon River,
Klickitat and Skamania Counties, WA
N

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 acres 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

PACIFIC POWER

Prepared by

TETRA TECH

September 20, 2016

Table of Contents

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 net-loss 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.

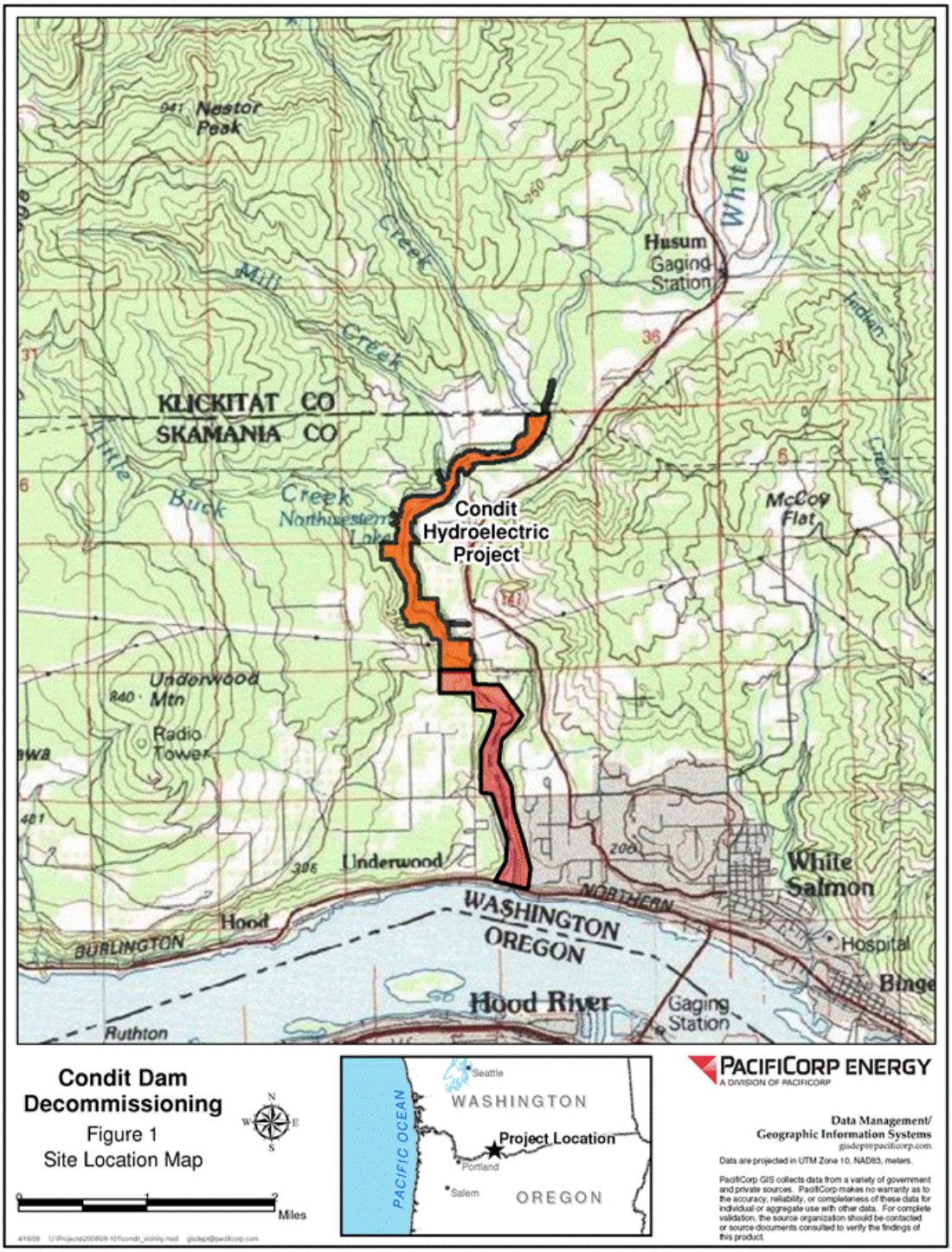


Figure 1. Project Location

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

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.

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

Common Name	Scientific Name	Wetland Status
Upland Warm-Dry Seed Mix		
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

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.

Table 3-2. Summary of Precipitation from April 2016 to July 22, 2016 at Snowden, WA[1]

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 3-3. 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 Washington[2] 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 Wind River drainage to the Washington-Oregon state line.

Table 3-4. 2016 Condit Wetland Summary

Wetland Identification	Square Footage	Acres	Washington Function Rating	Cowardin Classification	Appendix D Figure	Appendix C Photo Set
W-6a	669.2	0.02	I	PFO	4	3 C&D
W-6b	7,858.1	0.18	I	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	I	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	II	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	II	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**				

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.

Wetland 6A Field Conditions – 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 (ft^2), (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).

Wetland 6B Field Conditions – 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 ft^2 (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.

Wetland 9 Field Conditions – 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 ft^2 (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.

Wetland 10 Field Conditions – 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 ft^2 (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.

Wetland 12 Field Conditions – 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 ft^2 (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.

Wetland 21 Field Conditions – 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 ft^2 (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.

Wetland a Field Conditions – 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 ft^2 (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.*

Wetland v Field Conditions – 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 ft^2 (0.02 acre).

Wetland 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.

Wetland x Field Conditions – 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 ft^2 (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.

Wetland y Field Conditions – 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 ft^2 (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.

Wetland RW 1 Field Conditions – 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 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.

Wetland RW 2 Field Conditions – 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 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.

Wetland RW 3 Field Conditions – 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 ft^2 (4.99 acres).

3.3 SUPPLEMENTAL INFORMATION

Locations
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.

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

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**

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 Wildlife[3] 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.

Uplands

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.

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Appendix A – Wetland Data Sheets

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

Project/Site: CondiT City/County: KlickiTaT Sampling Date: 7/21/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: W-6a
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S2-T3N-R10E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): ~1%
Subregion (LRR): A Lat: 45.776962 Long: -121.521857 Datum: NAD83
Soil Map Unit Name: 92 - Husum gravelly ashy Loam NWI classification: PFO
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 X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Influenced by a large persistent seep uphill

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: r=30')			
1. Thuja plicata	20	Y	FAC
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: r=5')			
1. Impatiens capensis	90	Y	FACW
2. Stachys cooleyae	20	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
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)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Same vegetation commnity as 2014 survey. Vegetation is still very lush despite late season site investigation

SOIL

Sampling Point: W6a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					silty clay loam - mucky	

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

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

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

Indicators for Problematic Hydric 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soils The same as examined in The 2014

HYDROLOGY

Wetland Hydrology Indicators:

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

- 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 6"

Water Table Present? Yes X No ___ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 8

Wetland Hydrology Present? Yes X No ___

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

Remarks: Seep present upstream from Feature. Standing water And/or evidence of standing water is located Throughout The wetland Area

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

Project/Site: CondiT City/County: KlickiTaT Sampling Date: 7/21/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: W-6b

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S2-T3N-R10E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): ~1%

Subregion (LRR): A Lat: 45.77668 Long: -121.52198 Datum: _____

Soil Map Unit Name: 92 - Husum gravelly ashy loam NWI classification: PFO

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 X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r = 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	40	Y	FAC
2. Cornus nuttalli	5		FACU
3. Acer circinatum	5		FAC
4. Thuja plicata	5		FAC
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	

Herb Stratum (Plot size: r = 5')			
1. Impatiens capensis	40	Y	FACW
2. Iris pseudacorus	15		OBL
3. Anthyrium Filix-femina	10		FAC
4. Oenanthe sarmentosa	20	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-6b

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 2/1	100					Silty clay loam - mucky	

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

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

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

Indicators for Problematic Hydric 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 2

Water Table Present? Yes X No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

Project/Site: CondiT City/County: KlickiTaT Sampling Date: 7/21/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: Wba, b-upl

Investigator(s): S. Caruana, B. Horton Section, Township, Range: S2-T3N-R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR): A Lat: 45.776955 Long: -121.522112 Datum: NAD83

Soil Map Unit Name: 92- Husum gravelly ashy loam 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 X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: PLOT is Located between The Two wetlands on The upland rise. Seeps located on either side supply both wetlands 6a & 6b

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r = 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	50	Y	FAC
2.			
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: r = 15')			
1. Acer macrophyllum	15	Y	FACU
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Solanum americanum	40	Y	FACU
2. Impatiens capensis	20	Y	FACW
3. Rubus armeniacus	10		FACU
4. Acer macrophyllum	20	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[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.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Upland vegetation community with sporadic wetland species

SOIL

Sampling Point: Wba_b-upL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): >16"

Water Table Present? Yes _____ No X Depth (inches): >16"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >16"

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: ConduiT City/County: Skamania Sampling Date: 7/20/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: W-9

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S2-T3N-R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion (LRR): A Lat: 45.77818 Long: -121.524913 Datum: NAD83

Soil Map Unit Name: Unmapped-reservoir sediments 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 Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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.

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

Remarks: Remnant portion of fringe wetland receives hydrology from upgradient runoff and springs. Area is still saturated late in the season

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Impatiens capensis	50	Y	FACW
2. Phalaris arundinacea	50	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

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)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Plants appear slightly water stressed given late season delineation timing. Area is likely much more wet earlier in the season

SOIL

Sampling Point: W-9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					Sandy Loam	
6-20	10YR 3/2	20			D	M	Sandy Loam	
	10YR 4/2	60	2.5YR 4/8	40	C	M	Sandy Loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Very prominent redoximorphic features

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ___ No X Depth (inches): >20"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >20"

Wetland Hydrology Present? Yes X No ___

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

Remarks: Very prominent oxidized rhizospheres - likely too late in the growing season for visible hydrology. Upper extent of wetland near spring still has standing water

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/20/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: W-9-up1

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S2 - T3N - R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5%

Subregion (LRR): A Lat: 45.778142 Long: -121.524852 Datum: NAD83

Soil Map Unit Name: Unmapped - 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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.

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

Remarks: Originally part of a Fringe wetland Area That No Longer receives an input of Active hydrology

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Phalaris arundinacea	20	Y	FACW
2. Hordeum brachyantherum	20	Y	FACW
3. Lupinus albicaulis	60	Y	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Area has continued To dry out since last field visit in 2014

SOIL

Sampling Point: W-9 upl

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					Sand	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Graded reservoir fill material

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): > 18"

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): > 18"

Wetland Hydrology Present? Yes _____ No X

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

Remarks: Very dry soils

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/19/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: W-10
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3-T3N-R10E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.770324 Long: -121.539494 Datum: NAD 83
Soil Map Unit Name: Unmapped - reservoir sediments NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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.

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	40	Y	FAC
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Impatiens capensis	10	N	OBL
2. Mimulus moschatus	20	Y	OBL
3. Equisetum arvense	60	Y	FAC
4. Holcus lanatus	10	N	FAC
5. Phalaris arundinacea	20	Y	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
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)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Plot has filled in since 2014. Increased amounts of horsetail and reedcanarygrass than previous assessment

SOIL

Sampling Point: W-10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					Organic soils, greasy	

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

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

- 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 MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks: Very greasy and organic soil profile indicative of histosol soil that have potential to mask redox features. Soils show same characteristics as 2014 survey

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks: Wetland feature exhibits evidence of standing water during the early part of the growing season but is currently dry, soil is moist lower in the pit.

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/19/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: W-10-upl
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3 T3N R10E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 30%
Subregion (LRR): A Lat: 45.770326 Long: -121.539398 Datum: NAD83
Soil Map Unit Name: Unmapped - 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 N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No Y	

Remarks: Upland plot excavated on steep slope adjacent to the wetland feature

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Populus balsamifera Trichocarpa	15	Y	FAC
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: r-5')			
1. Lotus corniculatus	10	Y	FAC
2. Phalaris arundinacea	15	Y	FACW
3. Mahonia aquifolium	15	Y	FACU
4. Acer macrophyllum	15	Y	FACU
5. Symphoricarpos albus	10	Y	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 15	x 2 = 30
FAC species 25	x 3 = 50
FACU species 40	x 4 = 160
UPL species ____	x 5 = ____
Column Totals: 80 (A)	240 (B)

Prevalence Index = B/A = 7

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: W-10-up

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/4	100					Silt loam	rocky & cobbly

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 5"

Hydric Soil Present? Yes ____ No X

Remarks:

Soil is very dry

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Project/Site: CondiT City/County: KlickiTaT Sampling Date: 7/20/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: W-12

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3 - T3N - R10E

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): < 1%

Subregion (LRR): A Lat: 45.768147 Long: -121.535786 Datum: NAD83

Soil Map Unit Name: 92- Hasum gravelly ashy Loam NWI classification: PFO - riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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.

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

Remarks: This feature is an intact pre-breach wetland. Area closest to the old lake fringe has begun to dry up, wetland Area slightly smaller than 2014 survey

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Equisetum arvense	70	Y	FAC
2. Impatiens capensis	30	Y	FACW
3. Rubus armeniacus	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Area is dominated by jewelweed and horsetail

SOIL

Sampling Point: W-12

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/1	70	7.5YR 5/8	30	C	M	silty clay loam	
5-16	10YR 4/1							

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes X No ___ Depth (inches): 8"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4"

Wetland Hydrology Present? Yes X No ___

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

Remarks: Standing water present within some areas of the wetland. Skunk cabbage (OBL) patches near center indicating perennial saturation

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: WA Sampling Point: W-12-upl
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3-T3N-R10E
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5%
Subregion (LRR): A Lat: 45.768039 Long: -121.535813 Datum: NAD83
Soil Map Unit Name: 92-Husum gravelly ashy loam 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?	Yes ____ No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menzesii	70	Y	FACU
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Acer circinatum	30	Y	FAC
2. Alnus rubra	15		FAC
3. Corylus cornuta	20	Y	FACU
4. Rubus parviflorus	20	Y	FACU
5. Acer macrophyllum	20	Y	FACU
	105 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Polystichum munitum	30	Y	FACU
2. Rosa nutkana	30	Y	FAC
3. Impatiens capensis	20	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 8 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 35 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[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.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: W-12 upl

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 4/3	100					Silt Loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: CondiT City/County: KlicKiTaT Sampling Date: 7/20/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: W-21
Investigator(s): S.Caruana, B.HorTon Section, Township, Range: S3- T3N - R10E
Landform (hillslope, terrace, etc.): Hill Slope Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): A Lat: 45.770103 Long: -121.536613 Datum: NAD83
Soil Map Unit Name: 90A - Hood Loam NWI classification: PFO
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 X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: WeThand is substantially smaller in size, Interior of WeTland Feature remains unchanged

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1. Thuja phicaTa	80	Y	FACW
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Lysichiton americanus	40	Y	OBL
2. STachys cooleyae	30	Y	FACW
3. AThyrium Filix-femina	10	____	FAC
4. ImpaTiens capensis	10	____	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: W-21

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Silt Loam	
8-16	10YR 3/2	90	10YR 5/8	10	C	M	Silt Loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 0"

Water Table Present? Yes X No ____ Depth (inches): 0"

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

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Project/Site: Condit City/County: Klickitat Sampling Date: 7/20/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: W-21-upl

Investigator(s): B. Horton S. Caruana Section, Township, Range: S3 - T3N - R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 5%

Subregion (LRR): A Lat: 45.770164 Long: -121.536647 Datum: NAD83

Soil Map Unit Name: 90A - Hood Loam 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 X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r = 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga heterophyla	30		FAC
2. Thuja plicata	50	Y	FAC
3. Pseudotsuga menzesii	10		FACU
4.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: r = 15')			
1. Acer circinatum	20	Y	FACU
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: r = 5')			
1. Athyrium filix-femina	10	Y	FAC
2. Galium aparine	10		FACU
3. Mahonia aquifolium	10		FACU
4. Rubus ursinus	10		FACU
5. Achlys Triphylla	10		(FACW)
6. Polystichum manitum	10		FACU
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[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.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-21 upL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/2	100						

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/20/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: W-a
Investigator(s): B. Horton S. Caruana Section, Township, Range: S2 T3N R10E
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): < 1%
Subregion (LRR): A Lat: 45.777346 Long: -121.525622 Datum: NAD83
Soil Map Unit Name: Unmapped-reservoir sediments NWI classification: PEM / PSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: This feature is maintained year round by an iron bacteria dominated spring. It is in the floodplain of the White Salmon (Bebe)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Alnus rubra	40	Y	FAC
2. Populus balsamifera Trichocarpa	40	Y	FAC
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Juncus effusus	40	Y	FACW
2. Carex obnupta	20	Y	OBL
3. Persicaria maculosa	10		FACW
4. Eleocharis palustris	20	Y	OBL
5. Poa campyi	20	Y	NI
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
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)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (cont.) River. It is above the Ohlson. Wetland is still exhibiting standing water in July 2016. The wetland is transitioning from PEM to a PSS wetland. It will eventually progress towards a PFO feature.

SOIL

Sampling Point: W-a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR2/1	90	10YR5/6	10	C	M	Sand	

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

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

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

Indicators for Problematic Hydric 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 8 in

Hydric Soil Present? Yes X No ___

Remarks:

Soil is saturated and almost black, strong hydrogen sulfide odor

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes X No ___ Depth (inches): 2 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0 in

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface water present throughout the wetland feature

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

Project/Site: Condit City/County: Skamania Sampling Date: 7/20/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: Wa-upl
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S2 - T3N - R10E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 5%
Subregion (LRR): A Lat: 45.777304 Long: -121.525606 Datum: NAD83
Soil Map Unit Name: Unmapped - 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 4, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: upland plot is six feet west of wetland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: r = 15')			
1. Populus balsamifera Trichocarpa	40	Y	FAC
2.			
3. Alnus rubra	20	Y	FAC
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Elymus Trachycaulus	10		FAC
2. Hordeum brachyantherum	60	Y	FACW
3. Festuca rubra	20	Y	FAC
4. Poa ampla	30	Y	FAC
5. Lupinus albicaulis	10		
6.			
7.			
8.			
9.			
10.			
11.			
	130 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

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:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
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)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Vegetation is moist and receives upgradient runoff. Clearly upland but enough moisture is present to sustain hydrophytic species.

SOIL

Sampling Point: W-up2

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

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

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Sandy well drained soil on slope

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): > 9 in

Water Table Present? Yes _____ No X Depth (inches): > 9 in

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): > 9 in

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/21/16

Applicant/Owner: PaciFiCorp State: WA Sampling Point: W-V

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3-T3N-R10E

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): A Lat: 45.777467 Long: -121.528368 Datum: NAD83

Soil Map Unit Name: Unmapped-reservoir sediments NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

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.

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

Remarks: This feature is composed primarily of volunteer cottonwoods supported by a seepage plane at the base (covers)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Populus balsamifera	60	Y	FAC
2.			
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus effusus	30	Y	FACW
2. Lotus corniculatus	15		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Estimates of vegetation cover based on remote observation

of the slope. Access to wetland V is limited to river side access from a raft. At the time of 2016 site visit, the local raft companies were not running the lower river. wetland 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 Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	95	10YR 5/8	5	C	M	Sand	

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

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

- ___ 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)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 8

Hydric Soil Present? Yes X No ___

Remarks: Due To The inability To access The site safely. The profile description is The same as The 2014 survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks: Site is a spring fed seep at The base of The slope above The White Salmon River

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/21/16
Applicant/Owner: PaciFi Corp State: WA Sampling Point: W-v-upl
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3-T3N R10E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15
Subregion (LRR): A Lat: 45.777506 Long: -121.528301 Datum: NAD83
Soil Map Unit Name: Unmapped - 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 X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Upland data based on 2014 Survey

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Lupinus abbicaulus	30	4	FAC
2. Bromus marginatus	15		
3. Festuca rubra	20		FAC
4. Lotus corniculatus	10		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
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)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: W-V-upL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100					Sand	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Plot is 100% reservoir deposit sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: ConduiT City/County: Skamania Sampling Date: 7/19/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: W-X

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S10 - T3N - R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR): A Lat: 45.767345 Long: -121.538933 Datum: NAD83

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 Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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.

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

Remarks: Seep originates from hillsiope and Trickles onTo The bench above Theformer dam LocaTion. Standing water present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Holcus lanaTus	20	N	FAC
2. Mimulus guTTatus	60	Y	obl
3. Hordeum brachyanTherum	25	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Area is dominaTed by monkey Flower, Algal crusT is present ThroughouT The wetland. Feature appears more And green Than in 2014

SOIL

Sampling Point: W-X

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 5/1	100					Silt loam	significant rock component

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: bedrock

Depth (inches): 4 in

Hydric Soil Present? Yes X No ___

Remarks: Lobly angular rock indicating historical fill material And dam deconstruction rubble

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ___

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

Remarks: Standing water present Throughout wetland. aquatic organisms Throughout area (worms)

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

Project/Site: Condit City/County: Skamania Sampling Date: 7/19/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: W-x-upl
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S10 - T3N - R10E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5%
Subregion (LRR): A Lat: 45.767386 Long: -121.538944 Datum: NAD83
Soil Map Unit Name: Unmapped - former dam abutment NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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.

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

Remarks: rocky shelf above former dam location

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Holcus lanatus	15	Y	FAC
2. Lotus corniculatus	15	Y	FAC
3. Phalaris arundinacea	40	Y	FACW
4. Lupinus Albicaulis	15		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
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)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Area is rocky and primarily devoid of vegetation

SOIL

Sampling Point: W-X-UPL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/3	100					Loamy SIT	Angular fill material

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rock

Depth (inches): 2 in

Hydric Soil Present? Yes ____ No X

Remarks:

rocky area with minimal soil above bedrock

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No X Depth (inches): > 2"

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): > 2"

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

Very dry and crumbly soils

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: WA Sampling Point: W-y

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3-T3N-R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5%

Subregion (LRR): A Lat: 45.772006 Long: -121.53618 Datum: NAD83

Soil Map Unit Name: Unmapped-reservoir sediments NWI classification: PSS-riparian

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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.

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

Remarks: Wetland is immediately abutting an unmapped stream for the majority of its extent. Stream was flowing at the time of the survey

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Salix lasiandra	60	Y	FACW
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Juncus effusus	30	Y	FACW
2. Carex obnupta	10	Y	OBL
3. Carex unilateralis	10	Y	OBL
4. Glyceria elata	10	Y	FACW
5. Impatiens capensis	40	Y	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Willow growth and coverage has filled in substantially since 2014

SOIL

Sampling Point: W-4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/1	80	10YR 4/6	20	C	M	Silt Loam	
8-16	10YR 4/1	90	10YR 5/8	10	C	M	Silt Loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks: Soil is similar To The soils characterized in The 2014 Survey

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 0"

Water Table Present? Yes X No ____ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 0"

Wetland Hydrology Present? Yes X No ____

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

Remarks: Creek is Flowing in Late July and margins were saturated

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: WA Sampling Point: W-4-upl

Investigator(s): B. Horton, S. Caruana Section, Township, Range: S3-T3N-R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5%

Subregion (LRR): A Lat: 45.772049 Long: -121.536208 Datum: NAD 83

Soil Map Unit Name: Unmapped - reservoir sediments NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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.

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

Remarks: Plot excavated upslope of wetland plot on slope graded adjacent to the unnamed

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Acer macrophyllum	20	Y	FACU
2. Pseudotsuga menziesii	20	Y	FACU
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Elymus Trachycaulus	25	Y	FAC
2. Achillea millefolium	20	Y	FACU
3. Glyceria elata	20	Y	FACW
4. Festuca rubra rubra	15	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 20	x 2 =	40
FAC species 40	x 3 =	120
FACU species 60	x 4 =	240
UPL species	x 5 =	
Column Totals: 120 (A)		400 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: W-y-up

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silt Loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil is indicative of fill/reservoir sediment

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Soil is dry and crumbly

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/19/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: BW-1
Investigator(s): S. Caruana, B. Horton Section, Township, Range: S3 T3N R10E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR): A Lat: 45.770403 Long: 121.537792 Datum: NAD83
Soil Map Unit Name: Unmapped - reservoir sediments NWI classification: PSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Salix lasiandra	80	Y	FACW
2. Populus balsamifera	20		FAC
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Juncus effusus	90	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
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)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: BW-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5 YR 4/2	90%	7.5YR 6/8	10	C	M	Silty Clay loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 1

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 3

Wetland Hydrology Present? Yes ___ No ___

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

Remarks: Seeping Flowing water @ Surface

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

Project/Site: Condit City/County: Skamania Sampling Date: 7/19/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: Wtl-1upl

Investigator(s): S. Caruana, B. Horton Section, Township, Range: S3-T3N-R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10%

Subregion (LRR): A Lat: 45.770353 Long: -121.537832 Datum: NAD83

Soil Map Unit Name: Unmapped 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 X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Populus balsamifera	20	Y	FACW
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Silene vulgaris	15		UPL
2. Poa spp	30	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: BW-1:4pt

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 5/2	100					Silty clay loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 2

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks: No hydrology indicators present

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

Project/Site: Condit City/County: Skamania Sampling Date: 7/19/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: BW-2

Investigator(s): S. Caruana, B. Horton Section, Township, Range: S3- T3N - R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 40

Subregion (LRR): A Lat: 45.768433 Long: -121. Datum: NAD83

Soil Map Unit Name: Unmapped - Reservoir sediments 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 Vegetation _____, Soil X, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Populus balsamifera	20	Y	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus effusus	80	Y	FACW
2. Phalaris arundinacae	20		
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[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.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: BW-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2						Silt Loam	
6-8	10YR 3/2	98	10YR 6/8	2	C	M	Silt Loam	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soils are reservoin sediments

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ___

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

Remarks: Soils are moist Late in The Season

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/19/16

Applicant/Owner: PacifiCorp State: WA Sampling Point: PW-2 upe

Investigator(s): S. Caraang, B. Horton Section, Township, Range: S3-T3N-R10E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 35%

Subregion (LRR): A Lat: 45.768326 Long: -121.537974 Datum: NAD83

Soil Map Unit Name: Unmapped - reservoir sediments NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Populus balsamifera	10	Y	FACW
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	15	Y	FACW
2. Holcus lanatus	10		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- 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)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: RW-2: upl

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	100						

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 8

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/21/16
Applicant/Owner: PaciFiCorp State: WA Sampling Point: RW-3
Investigator(s): S.Caruana, B.Horton Section, Township, Range: S23-T3N-R10E
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Flat Slope (%): <1%
Subregion (LRR): A Lat: 45.731733 Long: -121.521682 Datum: NAD83
Soil Map Unit Name: Unmapped- reservoir sediments 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 Vegetation N, Soil X, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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.

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

Remarks: Due To access restrictions imposed by Tribal concerns All observations conducted remotely (over)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Populus balsamifera			
2. Trichocarpa			
3. cover estimated @ 40-50%			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Vegetation was visually estimated			
2. using binoculars. Species			
3. composition and densities appear			
4. similar To The 2014 Survey			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum ____			

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[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.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: Plot visually estimated from East bank and us 14 Bridge. Cottonwood is substantially taller and entire Area looks very lush

Access To Wetland RW-3 is only provided via boat on The White Salmon river. Raft companies were NOT running The lower reach of The river during The time of The site investigation. Wetland parameters were largely estimated from Three vantage points using binoculars. Wetland indicators were inferred based on The 2014 site investigation. Wetland boundaries were visually estimated based off 2014 survey.

SOIL

Sampling Point: W-RW-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3						Silt	
3-10	10YR 5/1	50	5YR 3/4	50	D	M	Sand	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 10

Hydric Soil Present? Yes X No ___

Remarks: This plot was visually assessed due to access issues. Plot was visually estimated - Data represents Assessment made in 2014 survey

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes X No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 9

Wetland Hydrology Present? Yes X No ___

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

Remarks: Sandy surface appears to be wet at surface Through Binoculars, Some areas appear to pond as evidenced by OBL species and sediment deposits.

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

Project/Site: CondiT City/County: Skamania Sampling Date: 7/21/16
Applicant/Owner: PacifiCorp State: WA Sampling Point: BW-3-upl
Investigator(s): B. Horton, S. Caruana Section, Township, Range: S23-T3N-R10E
Landform (hillslope, terrace, etc.): Upland Terrace Local relief (concave, convex, none): convex Slope (%): <1%
Subregion (LRR): A Lat: 45.731687 Long: -121.522016 Datum: NAD83
Soil Map Unit Name: 92-Backanticrop-Rubbleland complex 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 X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Due To access resTricTions imposed by Tribal concerns. All observaTions conducted remoTely. Access To weTland BW-3 coded

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Cytisus scoparius	60	Y	UPL
2.			
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Iris pseudacorus	15		OBL
2. Trifolium repens	70	Y	FAC
3. Festuca rubra	15		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 15	x 1 = 15
FACW species _____	x 2 = _____
FAC species 85	x 3 = 255
FACU species _____	x 4 = _____
UPL species 60	x 5 = 300
Column Totals: 160 (A)	570 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

is only provided via boat on The White Salmon River. Raft companies were not running The Lower reach of The river during The Time of The site investigation. Wetland parameters were Largely estimated from Separate vantage points using binoculars, Wetland Indicators were inferred based on The 2014 site Investigation. Wetland and upland boundaries were visually estimated based upon The 2014 survey.

SOIL

Sampling Point: BW-3-upl

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Sand	

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

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

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

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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 14

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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): W-6a Date of site visit: 7/21/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 2 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 4 **Estimated size** 0.02

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☒ **II** ☐ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**24**
Score for Hydrologic Functions	**6**
Score for Habitat Functions	**23**
TOTAL score for Functions	**53**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☒ **I** ☐ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☒
Riverine	☐
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☒ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☐ NO – go to Step 5 ☒ **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.

Wetland name or number: W-6a_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☒ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	**3**
	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	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 ☒ • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐ 5
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding* ..... **Map of Hydroperiods**	**Figure** ☐ 1
	Total for D 1 *Add the points in the boxes above*	**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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier 2
◆	**<u>TOTAL</u> – Water Quality Functions** Multiply the score from D1 by D2. ***Record score on p. 1 of field form***	**<u>24</u>**
	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 ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☒ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☒ • No marks above 6 in. or wetland has only saturated soils ..... points = 0 ☐	2
	Total for D 3 *Add the points in the boxes above*	6
D 4	**Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *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 _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	*(see p. 42)* Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	**<u>6</u>**

Wetland name or number: W-6a_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • 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..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**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 ***record score on p.1 of field form.***	_____
	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 ☐ **Aerial photo or map showing average widths**	**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..... 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**	**Figure** ☐
	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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	_____

Wetland name or number: W-6a_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	_____

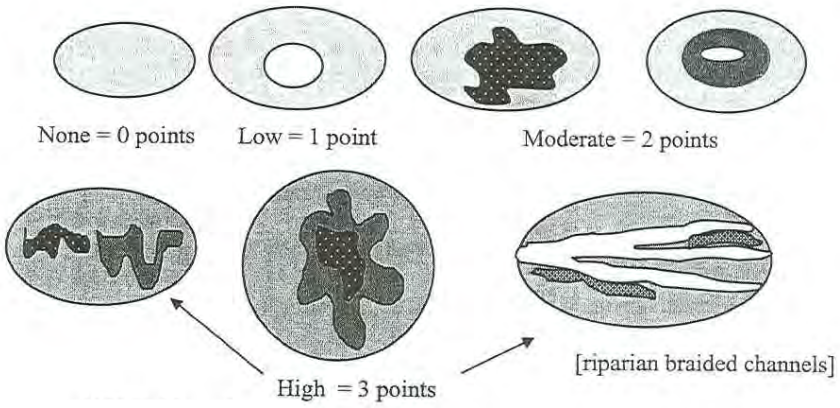
Comments:

Wetland name or number: W-6a_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-6a_____

These 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☒ < 4 species points = 0 ☐ # of species <u>4</u> *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.  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**	**Figure** ☐ 2

Comments: _____

Wetland name or number: W-6a_____

	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*	3
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**7**
H 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.* ☐ 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** ☐ 330 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 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 ..... **points = 1** ☐ 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**	**Figure** ☐ 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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	5

Comments: _____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☒ • 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 ☐ • Does not meet any of the four criteria above ..... points = 0 ☐	5
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**16**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**23**

Comments: _____

Wetland name or number: W-6a_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-6a_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☐ **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*)? ☒ **YES** = Category I ☐ **NO** = go to SC 5.2	**Cat. I** ☒
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☐ **YES** = Category II ☒ **NO** = go to SC 5.5	**Cat. II** ☐
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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	**I**

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 of wetland (if known): W-6b Date of site visit: 7/21/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 2 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 4 **Estimated size** 0.18

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☒ **II** ☐ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**24**
Score for Hydrologic Functions	**6**
Score for Habitat Functions	**24**
TOTAL score for Functions	**54**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☒ **I** ☐ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☒
Riverine	☐
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☒ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☐ NO – go to Step 5 ☒ **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.

Wetland name or number: W-6b_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☒ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	**3**
	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	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 ☒ • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐ 5
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding* ..... **Map of Hydroperiods**	**Figure** ☐ 1
	Total for D 1 *Add the points in the boxes above*	**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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier 2
◆	**<u>TOTAL</u> – Water Quality Functions** Multiply the score from D1 by D2. ***Record score on p. 1 of field form***	**<u>24</u>**
	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 ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☒ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☒ • No marks above 6 in. or wetland has only saturated soils ..... points = 0 ☐	2
	Total for D 3 *Add the points in the boxes above*	6
D 4	**Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *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 _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	*(see p. 42)* Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	**<u>6</u>**

Wetland name or number: W-6b_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • 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..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**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 ***record score on p.1 of field form.***	_____
	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 ☐ **Aerial photo or map showing average widths**	**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..... 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**	**Figure** ☐
	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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	_____

Wetland name or number: W-6b_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

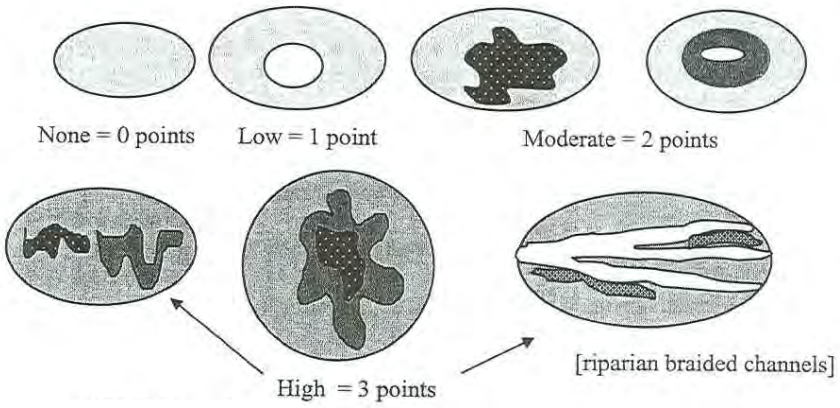
Comments:

Wetland name or number: W-6b_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-6b_____

These 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☒ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 2
	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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☒ < 4 species points = 0 ☐ # of species <u>4</u> *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.  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**	**Figure** ☐ 2

Comments: _____

Wetland name or number: W-6b_____

	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*	3
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**8**
H 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.* ☐ 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** ☐ 330 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 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 ..... **points = 1** ☐ 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**	**Figure** ☐ 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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	5

Comments: _____

Wetland name or number: W-6b_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☒ • 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 ☐ • Does not meet any of the four criteria above ..... points = 0 ☐	5
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**17**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**24**

Comments: _____

Wetland name or number: W-6b_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-6b_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☐ **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*)? ☒ **YES** = Category I ☐ **NO** = go to SC 5.2	**Cat. I** ☒
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☐ **YES** = Category II ☒ **NO** = go to SC 5.5	**Cat. II** ☐
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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	**I**

Wetland name or number: W-9-SP-6_____

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): W-9 Date of site visit: 7/20/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 2 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 4 **Estimated size** 0.07

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☒ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**12**
Score for Hydrologic Functions	**12**
Score for Habitat Functions	**10**
TOTAL score for Functions	**34**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☒
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☐ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☐ NO – go to Step 5 ☒ **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.

Wetland name or number: W-9-SP-6_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-9-SP-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 > 1/10th of area of unit draw polygons on aerial photo or map.** • Depressions present but cover < 1/10 area of wetland ..... points = 1 ☒ • No depressions present ..... points = 0 ☐	**Figure** ☐ 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)*: • Forest or shrub > 2/3 the area of the wetland..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☒ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**Figure** ☐ 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?** 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 2
◆	**<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>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..... 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 ☐ **Aerial photo or map showing average widths**	**Figure** ☐ 10
	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 = 2 ☐ • Vegetation does not meet above criteria..... points = 0 ☒ **Aerial photo or map showing polygons of different vegetation types**	**Figure** ☐ 0
	Total for R3 *Add the points in the boxes above*	10
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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier 2
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	**<u>12</u>**

Wetland name or number: W-9-SP-6_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	Total for L1 *Add 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. *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	*(see p.53)* 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 ***(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 ☐ **Aerial photo or map with Cowardin vegetation classes**	**Figure** ☐
L 4	**Does the wetland have the <u>opportunity</u> to reduce erosion?** 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	*(see p. 55)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from L3 by the multiplier L4. ***Record score on p.1 of field form.***	____

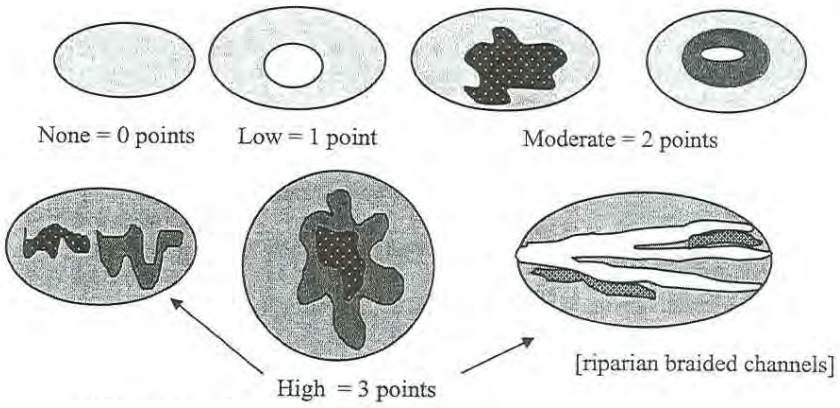
Comments:

Wetland name or number: W-9-SP-6_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-9-SP-6_____

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		Points (only 1 score per box)
H 1	**Does the wetland have the potential 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☐ 3 types.....points = 2 ☐ 1 type .....points = 0 ☒ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 0
	H 1.2 Is one of the vegetation types "aquatic bed?" *(see p.64)* ☐ **YES** = 1 point ☒ **NO** = 0 points	0
	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 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**	**Figure** ☐ 0
	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 ☐ < 4 species points = 0 ☒ # of species 2 *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.  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**	**Figure** ☐ 0

Comments: _____

Wetland name or number: W-9-SP-6_____

	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*	0
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**0**
H 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.* ☐ 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** ☐ 330 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 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 ..... **points = 1** ☒ 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**	**Figure** ☐ 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) ☒ **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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	1

Comments: _____

Wetland name or number: W-9-SP-6_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).* Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☒ • 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 ☐ • Does not meet any of the four criteria above ..... points = 0 ☐	5
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**5**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**10**

Comments: _____

Wetland name or number: W-9-SP-6_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☐ **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.)? ☐ **YES** = Category II ☐ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-9-SP-6_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☒ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☐
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☐ **YES** = Category II ☒ **NO** = go to SC 5.5	**Cat. II** ☐
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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	_____

Wetland name or number: W-10_____

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): W-10 Date of site visit: 7/19/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 3 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 3 **Estimated size** 0.02

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☒ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**6**
Score for Hydrologic Functions	**6**
Score for Habitat Functions	**29**
TOTAL score for Functions	**41**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☒ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☒
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☐ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-10_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding* ..... **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-10_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • Depressions present but cover < 1/10 area of wetland ..... points = 1 ☒ • No depressions present ..... points = 0 ☐	**Figure** ☐ 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)*: • Forest or shrub > 2/3 the area of the wetland..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☒ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**Figure** ☐ 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?** 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 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>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 ..... 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 ☒ **Aerial photo or map showing average widths**	**Figure** ☐ 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 = 2 ☒ • Vegetation does not meet above criteria..... points = 0 ☐ **Aerial photo or map showing polygons of different vegetation types**	**Figure** ☐ 2
	Total for R3 *Add the points in the boxes above*	3
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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier 2
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	**<u>6</u>**

Wetland name or number: W-10_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

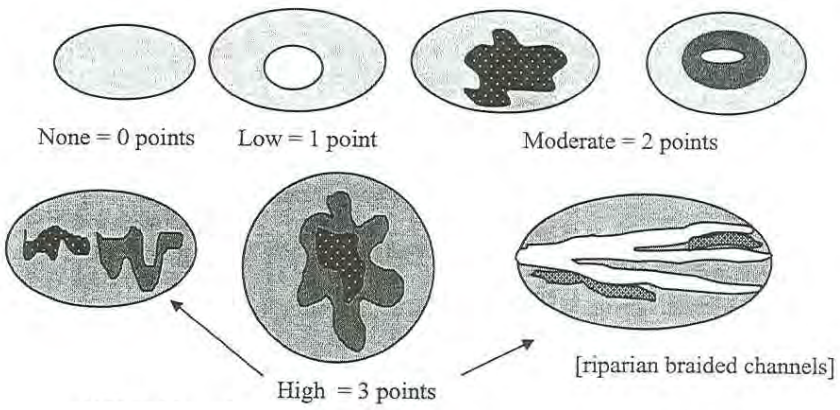
Comments:

Wetland name or number: W-10_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-10_____

These 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 1
	H 1.2 Is one of the vegetation types "aquatic bed?" *(see p.64)* ☒ **YES** = 1 point ☐ **NO** = 0 points	1
	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 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 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**	**Figure** ☐ 3
	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 ☐ # of species <u>5</u> *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.  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**	**Figure** ☐ 2

Comments: _____

Wetland name or number: W-10_____

	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*	3
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**10**
H 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.* ☒ 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** ☐ 330 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 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 ..... **points = 1** ☐ 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**	**Figure** ☐ 5
	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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	5

Comments: _____

Wetland name or number: W-10_____

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*
Which of the following priority habitats are within 330ft (100m) of the wetland unit?
NOTE: the connections to the habitats can be disturbed.

- ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*).
- ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*)
- ☐ **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).
- ☒ **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.

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

H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☒
- 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 ☐
- Does not meet any of the four criteria above ..... points = 0 ☐

5

H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above* **19**

H 3 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)*
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

◆ **Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1*** **29**

Comments: _____

Wetland name or number: W-10_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☐ **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.)? ☐ **YES** = Category II ☐ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-10_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☐ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☐
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☒ **YES** = Category II ☐ **NO** = go to SC 5.5	**Cat. II** ☒
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☒ **YES** = Category II	**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**

Wetland name or number: W-12_____

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): W-12 Date of site visit: 7/20/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 3 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 3 **Estimated size** 0.10

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☒ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**12**
Score for Hydrologic Functions	**10**
Score for Habitat Functions	**13**
TOTAL score for Functions	**35**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☒
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☐ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-12_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding* ..... **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-12_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • Depressions present but cover < 1/10 area of wetland ..... points = 1 ☒ • No depressions present ..... points = 0 ☐	**Figure** ☐ 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)*: • Forest or shrub > 2/3 the area of the wetland..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☒ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**Figure** ☐ 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?** 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 2
◆	**<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>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..... 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 ☒ **Aerial photo or map showing average widths**	**Figure** ☐ 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 = 2 ☐ • Vegetation does not meet above criteria..... points = 0 ☐ **Aerial photo or map showing polygons of different vegetation types**	**Figure** ☐ 4
	Total for R3 *Add the points in the boxes above*	5
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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier 2
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	**<u>10</u>**

Wetland name or number: W-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** ☐
	L 1.2 Characteristics of the vegetation in the wetland: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

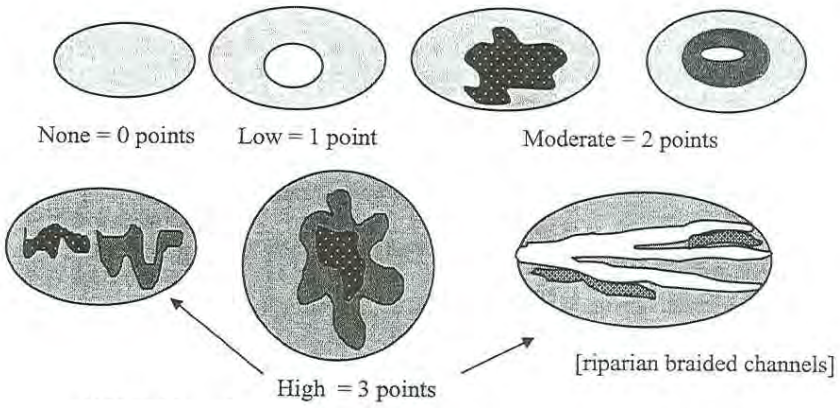
Comments:

Wetland name or number: W-12_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-12_____

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		**Points** (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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☐ 3 types.....points = 2 ☐ 1 type .....points = 0 ☒ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 0
	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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☒ < 4 species points = 0 ☐ # of species <u>4</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-12_____

	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*	3
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	5
H 2	**Does the wetland have the opportunity 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 > 50% 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 = 3** ☐ 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 ..... **points = 1** ☒ 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**	**Figure** ☐ 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). ☐ **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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	1

Comments: _____

Wetland name or number: W-12_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☐ • 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 ☐ • Does not meet any of the four criteria above ..... points = 0 ☐	2
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**8**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**13**

Comments: _____

Wetland name or number: W-12_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-12_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☒ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☐
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☐ **YES** = Category II ☒ **NO** = go to SC 5.5	**Cat. II** ☐
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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	_____

Wetland name or number: W-21_____

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): W-21 Date of site visit: 7/20/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 3 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 3 **Estimated size** 0.01

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **IV**

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

Score for "Water Quality" Functions	**7**
Score for Hydrologic Functions	**3**
Score for Habitat Functions	**15**
TOTAL score for Functions	**25**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☒ **I** ☐ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☐
Lake-fringe	☐
Slope	☒
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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-21_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☒ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-21_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-21_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • 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..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**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 ***record score on p.1 of field form.***	_____
	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 ☐ **Aerial photo or map showing average widths**	**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..... 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**	**Figure** ☐
	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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	_____

Wetland name or number: W-21_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

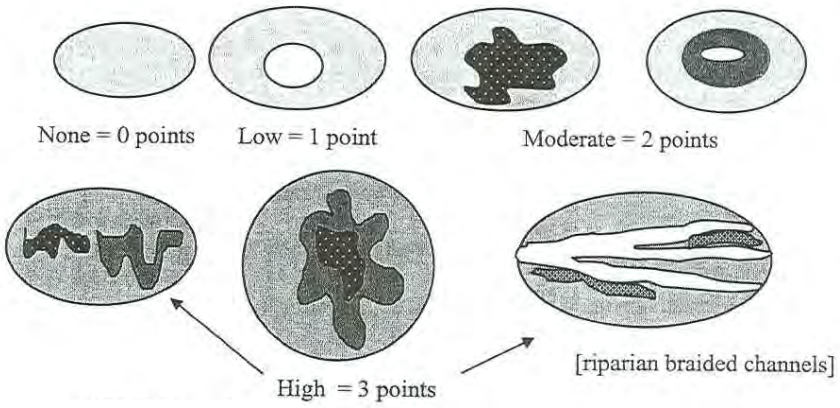
Comments:

Wetland name or number: W-21_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 0	1
	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.* • 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**	**Figure ☐** 6
	Total for S 1 *Add the points in the boxes above*	**7**
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 ☐ 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	*(see p. 58)* Multiplier 1
◆	**<u>TOTAL</u> – 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 = 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 ☐	3
	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 S3 Add 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. *Note which of the following conditions apply.* ☐ Wetland has surface runoff that can cause flooding problems downgradient ☐ Other _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	**3**

Comments: _____

Wetland name or number: W-21_____

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		**Points** (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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 2
	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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☒ < 4 species points = 0 ☐ # of species <u>5</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-21_____

	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*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	5
H 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.* ☐ 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** ☐ 330 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 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 ..... **points = 1** ☐ 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**	**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) ☒ **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	1

Comments: _____

Wetland name or number: W-21_____

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*
Which of the following priority habitats are within 330ft (100m) of the wetland unit?
NOTE: the connections to the habitats can be disturbed.

- ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*).
- ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*)
- ☐ **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).
- ☒ **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.

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

H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☐
- 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 ☐
- Does not meet any of the four criteria above ..... points = 0 ☐

2

H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above* **10**

H 3 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)*
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

◆ **Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1*** **15**

Comments: _____

Wetland name or number: W-21_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-21_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☐ **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*)? ☒ **YES** = Category I ☐ **NO** = go to SC 5.2	**Cat. I** ☒
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☐ **YES** = Category II ☒ **NO** = go to SC 5.5	**Cat. II** ☐
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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	**I**

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 wetland (if known): W-a Date of site visit: 7/20/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 2 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 4 **Estimated size** 0.03

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☒ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**7**
Score for Hydrologic Functions	**2**
Score for Habitat Functions	**23**
TOTAL score for Functions	**32**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☒
Riverine	☐
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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 multiple 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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☐ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☐ NO – go to Step 5 ☒ **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.

Wetland name or number: W-a_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☒	**1**
	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	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 ☒ • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐ 5
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐ 1
	Total for D 1 *Add the points in the boxes above*	**7**
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 ☐ Other _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	Multiplier 1
◆	**<u>TOTAL</u> – Water Quality Functions** Multiply the score from D1 by D2. ***Record score on p. 1 of field form***	**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 ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☒	0
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☒ • No marks above 6 in. or wetland has only saturated soils ..... points = 0 ☐	2
	Total for D 3 *Add the points in the boxes above*	2
D 4	**Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *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 _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	*(see p. 42)* Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	**2**

Wetland name or number: W-a_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • 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..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**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 ***record score on p.1 of field form.***	_____
	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 ☐ **Aerial photo or map showing average widths**	**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..... 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**	**Figure** ☐
	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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	_____

Wetland name or number: W-a_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

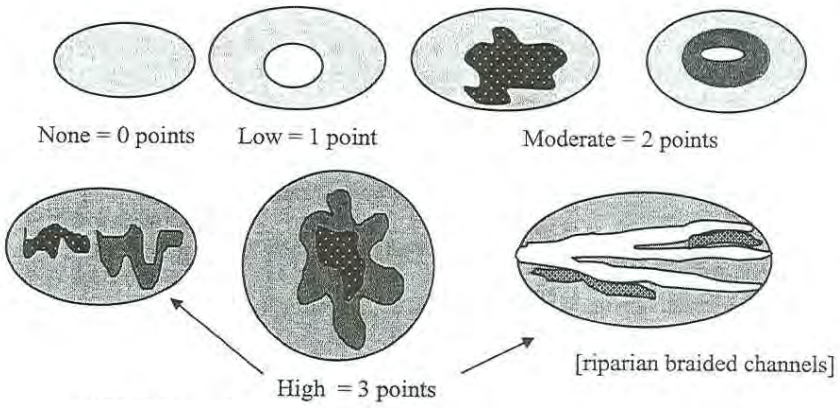
Comments:

Wetland name or number: W-a_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-a_____

These 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☐ 3 types.....points = 2 ☐ 1 type .....points = 0 ☒ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 0
	H 1.2 Is one of the vegetation types "aquatic bed?" *(see p.64)* ☒ **YES** = 1 point ☐ **NO** = 0 points	1
	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 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 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**	**Figure** ☐ 3
	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 ☐ # of species <u>5</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-a_____

	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*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**7**
H 2	**Does the wetland have the opportunity 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 > 50% 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 = 3** ☐ 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 ..... **points = 1** ☐ 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**	**Figure** ☐ 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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	5

Comments: _____

Wetland name or number: W-a_____

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*
Which of the following priority habitats are within 330ft (100m) of the wetland unit?
NOTE: the connections to the habitats can be disturbed.

- ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*).
- ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*)
- ☐ **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).
- ☒ **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.

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

H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☒
- 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 ☐
- Does not meet any of the four criteria above ..... points = 0 ☐

5

H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above* **16**

H 3 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)*
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

◆ **Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1*** **23**

Comments: _____

Wetland name or number: W-a_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☐ **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.)? ☐ **YES** = Category II ☐ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-a_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☐ **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*)? ☐ **YES** = Category I ☐ **NO** = go to SC 5.2	**Cat. I** ☐
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☐ **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 (*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*) ☐ **YES** = Category II ☐ **NO** = go to SC 5.5	**Cat. II** ☒
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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**

Wetland name or number: W-RW-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 wetland (if known): W-RW-1 Date of site visit: 7/19/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 3 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 4 **Estimated size** 0.04ac

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☒ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**9**
Score for Hydrologic Functions	**6**
Score for Habitat Functions	**17**
TOTAL score for Functions	**32**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☒ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☐
Lake-fringe	☐
Slope	☒
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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-1_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☒ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-RW-1_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-RW-1_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • 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..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**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 ***record score on p.1 of field form.***	_____
	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 ☐ **Aerial photo or map showing average widths**	**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..... 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**	**Figure** ☐
	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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	_____

Wetland name or number: W-RW-1_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	_____

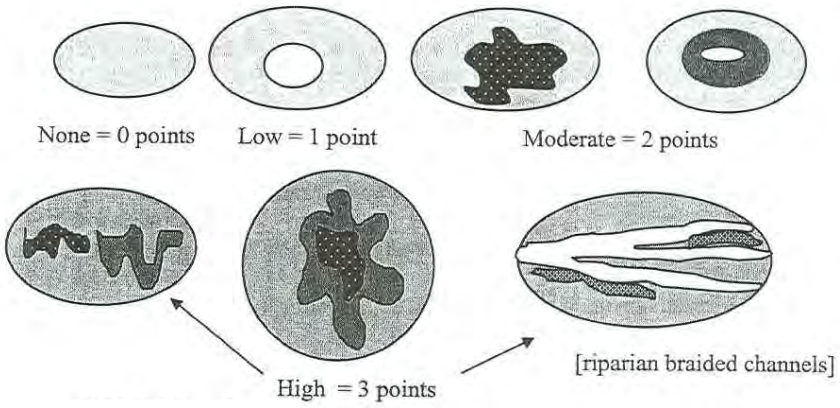
Comments:

Wetland name or number: W-RW-1_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 0	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	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.* • 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**	**Figure ☐** 6
	Total for S 1 *Add 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 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	*(see p. 58)* Multiplier 1
◆	**<u>TOTAL</u> – Water Quality Functions** Multiply the score from S1 by the multiplier in S2. ***Record score on p.1 of field form.***	**<u>9</u>**
	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 ☐	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 S3 Add 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. *Note which of the following conditions apply.* ☐ Wetland has surface runoff that can cause flooding problems downgradient ☐ Other _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	**<u>6</u>**

Comments: _____

Wetland name or number: W-RW-1_____

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		Points (only 1 score per box)
H 1	**Does the wetland have the potential 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 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 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 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**	**Figure** ☐ 0
	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 ☐ < 4 species points = 0 ☒ # of species 3 *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-RW-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*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**3**
H 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.* ☐ 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** ☐ 330 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 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 ..... **points = 1** ☐ 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**	**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) ☒ **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	5

Comments: _____

Wetland name or number: W-RW-1_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☐ • 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 ☐ • Does not meet any of the four criteria above ..... points = 0 ☐	2
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**17**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**14**

Comments: _____

Wetland name or number: W-RW-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.

Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-RW-1_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☒ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☒
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☒ **YES** = Category II ☐ **NO** = go to SC 5.5	**Cat. II** ☒
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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**

Wetland name or number: W-RW-2_____

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): W-RW-2 Date of site visit: 7/19/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 3 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 4 **Estimated size** 0.13ac

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☒ **III** ☐ **IV**

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

Score for "Water Quality" Functions	**6**
Score for Hydrologic Functions	**6**
Score for Habitat Functions	**18**
TOTAL score for Functions	**30**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☒ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☐
Lake-fringe	☐
Slope	☒
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☒ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-RW-2_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-RW-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 ..... points = 6 ☐ • Depressions cover > 1/10 area of wetland ..... points = 3 ☐ **If depressions > 1/10th of area of unit draw polygons on aerial photo or map.** • 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..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**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 ***record score on p.1 of field form.***	_____
	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 ☐ **Aerial photo or map showing average widths**	**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..... 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**	**Figure** ☐
	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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	_____

Wetland name or number: W-RW-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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	_____

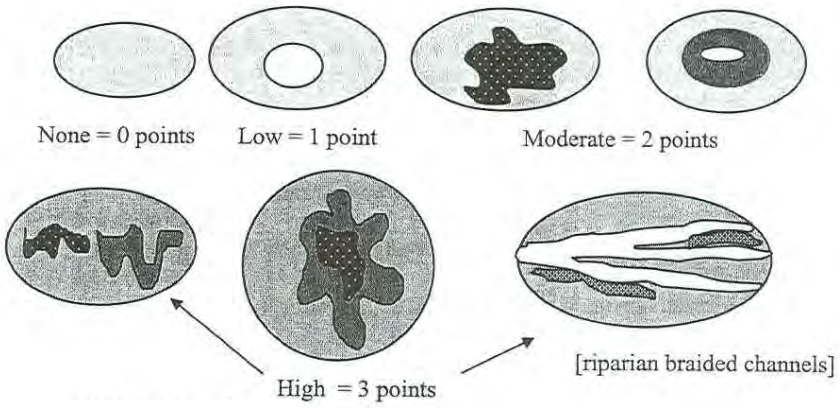
Comments:

Wetland name or number: W-RW-2_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 0	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.* • 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**	**Figure ☐** 6
	Total for S 1 *Add the points in the boxes above*	**6**
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 ☐ 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	*(see p. 58)* Multiplier 1
◆	**<u>TOTAL</u> – Water Quality Functions** Multiply the score from S1 by the multiplier in S2. ***Record score on p.1 of field form.***	**<u>6</u>**
	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 ☐	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 S3 Add 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. *Note which of the following conditions apply.* ☐ Wetland has surface runoff that can cause flooding problems downgradient ☐ Other _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	**<u>6</u>**

Comments: _____

Wetland name or number: W-RW-2_____

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		**Points** (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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☐ < 4 species points = 0 ☒ # of species <u>3</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-RW-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)* *Maximum score possible = 6*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**3**
H 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.* ☐ 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** ☒ 330 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 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 ..... **points = 1** ☐ 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**	**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 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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	5

Comments: _____

Wetland name or number: W-RW-2_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☐ • 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 ☐ • Does not meet any of the four criteria above ..... points = 0 ☐	2
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**15**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**18**

Comments: _____

Wetland name or number: W-RW-2_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-RW-2_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☒ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☒
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☒ **YES** = Category II ☐ **NO** = go to SC 5.5	**Cat. II** ☒
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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**

Wetland name or number: W-RW-3_____

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): W-RW-3 Date of site visit: 7/21/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 23 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 5 **Estimated size** 4.99ac

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **IV**

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

Score for "Water Quality" Functions	**0**
Score for Hydrologic Functions	**2**
Score for Habitat Functions	**11**
TOTAL score for Functions	**13**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☒
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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-3_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☒ NO – go to Step 3 ☐ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☐ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-RW-3_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-RW-3_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • Depressions present but cover < 1/10 area of wetland ..... points = 1 ☐ • No depressions present ..... points = 0 ☒	**Figure** ☐ 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)*: • Forest or shrub > 2/3 the area of the wetland..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☒ **Arial photo or map showing polygons of different vegetation cover**	**Figure** ☐ 0
	Total for R1 Add the points in the boxes above	0
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 2
◆	**<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>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 ..... 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 ☒ **Aerial photo or map showing average widths**	**Figure** ☐ 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 = 2 ☐ • Vegetation does not meet above criteria..... points = 0 ☒ **Aerial photo or map showing polygons of different vegetation types**	**Figure** ☐ 0
	Total for R3 *Add the points in the boxes above*	1
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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier 2
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	**<u>2</u>**

Wetland name or number: W-RW-3_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	_____

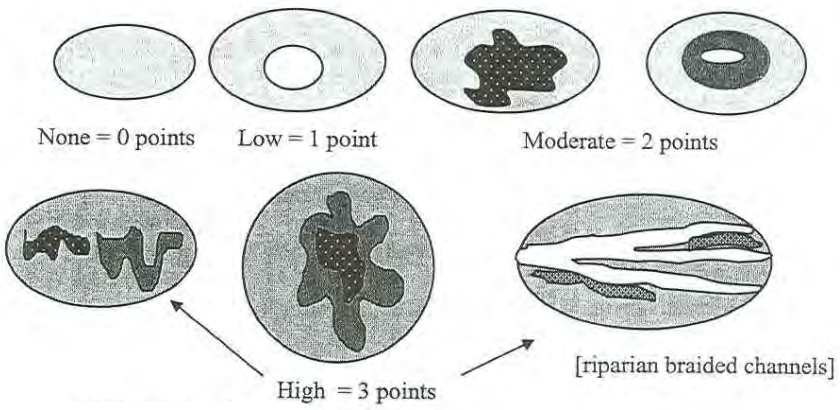
Comments:

Wetland name or number: W-RW-3_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-RW-3_____

These questions apply to wetlands of all HGM classes.		**Points** (only 1 score per box)
	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 <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 ☒ 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.....points = 3 ☐ 2 types.....points = 1 ☐ 3 types.....points = 2 ☐ 1 type .....points = 0 ☒ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 0
	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 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 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**	**Figure** ☐ 3
	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 ☐ # of species <u>5</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-RW-3_____

	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*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**6**
H 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.* ☐ 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** ☐ 330 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 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 ..... **points = 1** ☐ 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**	**Figure** ☐ 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). ☒ **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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	5

Comments: _____

Wetland name or number: W-RW-3_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☐ • 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 ☒ • Does not meet any of the four criteria above ..... points = 0 ☐	1
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**11**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**11**

Comments: _____

Wetland name or number: W-RW-3_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-RW-3_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☒ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☐
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☒ **YES** = Category II ☒ **NO** = go to SC 5.5	**Cat. II** ☐
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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	**NA**

Wetland name or number: W-v_____

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): W-v Date of site visit: 7/21/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 3 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** ☐ **IV**

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

Score for "Water Quality" Functions	**5**
Score for Hydrologic Functions	**6**
Score for Habitat Functions	**19**
TOTAL score for Functions	**30**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☒ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☒
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☐ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-v_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-v_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • Depressions present but cover < 1/10 area of wetland ..... points = 1 ☐ • No depressions present ..... points = 0 ☒	**Figure** ☐ 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)*: • Forest or shrub > 2/3 the area of the wetland..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☒ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**Figure** ☐ 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?** 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 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>**
	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 ☒ **Aerial photo or map showing average widths**	**Figure** ☐ 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 = 2 ☒ • Vegetation does not meet above criteria..... points = 0 ☐ **Aerial photo or map showing polygons of different vegetation types**	**Figure** ☐ 2
	Total for R3 *Add the points in the boxes above*	3
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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier 2
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	**<u>6</u>**

Wetland name or number: W-v_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

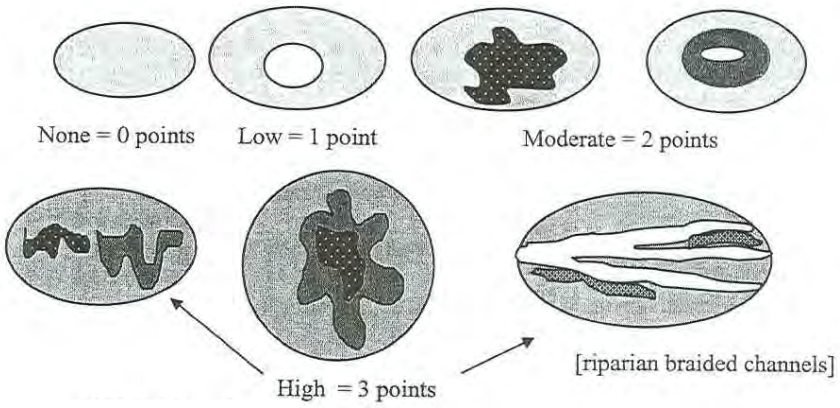
Comments:

Wetland name or number: W-v_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-v_____

These 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☐ < 4 species points = 0 ☒ # of species <u>3</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-v_____

	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*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**3**
H 2	**Does the wetland have the opportunity 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 > 50% 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 = 3** ☐ 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 ..... **points = 1** ☐ 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**	**Figure** ☐ 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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	5

Comments: _____

Wetland name or number: W-v_____

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*
Which of the following priority habitats are within 330ft (100m) of the wetland unit?
NOTE: the connections to the habitats can be disturbed.

- ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*).
- ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*)
- ☐ **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).
- ☒ **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.

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

H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☒
- 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 ☐
- Does not meet any of the four criteria above ..... points = 0 ☐

5

H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above* **16**

H 3 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)*
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

◆ **Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1*** **19**

Comments: _____

Wetland name or number: W-v_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-v_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☒ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☐
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☒ **YES** = Category II ☐ **NO** = go to SC 5.5	**Cat. II** ☒
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☒ **YES** = Category II	**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**

Wetland name or number: W-x_____

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): W-x Date of site visit: 7/19/16

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** ☒ **IV**

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

Score for "Water Quality" Functions	**9**
Score for Hydrologic Functions	**3**
Score for Habitat Functions	**14**
TOTAL score for Functions	**26**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☐
Lake-fringe	☐
Slope	☒
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☒ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-x_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-x_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • 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..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☐ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**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 ***record score on p.1 of field form.***	_____
	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 ☐ **Aerial photo or map showing average widths**	**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..... 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**	**Figure** ☐
	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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	_____

Wetland name or number: W-x_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

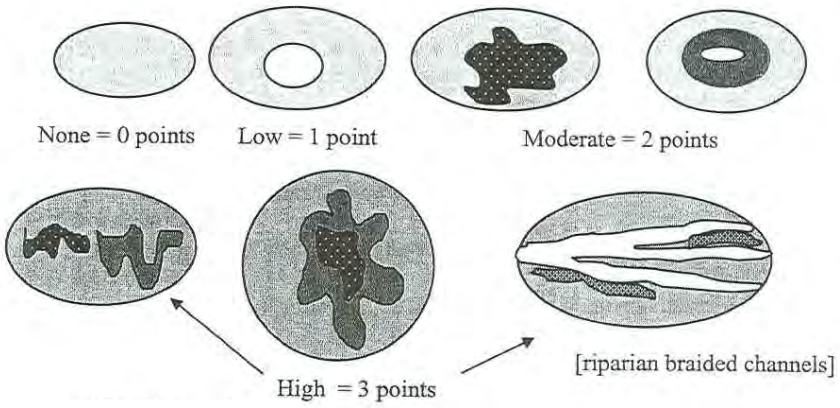
Comments:

Wetland name or number: W-x_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 0	3
	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.* • 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**	**Figure ☐** 6
	Total for S 1 *Add 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 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	*(see p. 58)* Multiplier 1
◆	**<u>TOTAL</u> – Water Quality Functions** Multiply the score from S1 by the multiplier in S2. ***Record score on p.1 of field form.***	**<u>9</u>**
	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 ☐	1
	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 S3 Add 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. *Note which of the following conditions apply.* ☐ Wetland has surface runoff that can cause flooding problems downgradient ☐ Other _____ ☐ **YES** multiplier is 2 ☒ **NO** multiplier is 1	Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	**<u>3</u>**

Comments: _____

Wetland name or number: W-x_____

These 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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 1
	H 1.2 Is one of the vegetation types "aquatic bed?" *(see p.64)* ☒ **YES** = 1 point ☐ **NO** = 0 points	1
	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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☐ < 4 species points = 0 ☒ # of species <u>2</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-x_____

	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*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**3**
H 2	**Does the wetland have the opportunity 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 > 50% 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 = 3** ☐ 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 ..... **points = 1** ☐ 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**	**Figure** ☐ 5
	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 (*do not include man-made ditches*)? ☒ **YES** = 1 point ☐ **NO** = 0 points	1

Comments: _____

Wetland name or number: W-x_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☐ • 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 ☒ • Does not meet any of the four criteria above ..... points = 0 ☐	1
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**11**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**4**

Comments: _____

Wetland name or number: W-x_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☐ **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.)? ☐ **YES** = Category II ☐ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-x_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☒ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☐
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☐ **YES** = Category II ☒ **NO** = go to SC 5.5	**Cat. II** ☐
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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	_____

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 wetland (if known): W-y Date of site visit: 7/20/16

Rated by: S. Caruana Trained by Ecology? ☐ Yes ☒ No Date of training: _____

SEC: 3 TWNSHP: 3 North RNGE: 10 East Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: Figure 3 **Estimated size** 0.03

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ **I** ☐ **II** ☐ **III** ☒ **IV**

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

Score for "Water Quality" Functions	**5**
Score for Hydrologic Functions	**6**
Score for Habitat Functions	**14**
TOTAL score for Functions	**23**

Category based on SPECIAL CHARACTERISTCS of Wetland: ☐ **I** ☒ **II** ☐ **III** ☐ **Does not Apply**

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

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	☐
Alkali	☐
Natural Heritage Wetland	☐
Bog	☐
Forest	☐
None of the above	☐

Wetland Class	
Depressional	☐
Riverine	☒
Lake-fringe	☐
Slope	☐
Check if unit has multiple HGM classes present	☐

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

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

Check List for Wetlands that Need Special and that are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	☐	☒
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).	☐	☒
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	☐	☒
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	☐	☒

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

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_____

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.

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)?

   ☒ NO – go to Step 2 ☐ **YES** – The wetland class is **Lake-fringe (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 (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 except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

   ☐ NO – go to Step 3 ☒ **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". *The wetland can contain depressions that are filled with water when the river is not flooding.*

   ☐ 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. *This means that any outlet, if present is higher than the interior of the wetland.*

   ☒ NO – go to Step 5 ☐ **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.

Wetland name or number: W-y_____

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 ..... points = 5 ☐ • Wetland has an intermittently flowing outlet ..... points = 3 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 3 ☐ • Wetland has a permanently flowing surface outlet ..... points = 1 ☐	
	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): • 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 area ..... points = 1 ☐ • Wetland has persistent, ungrazed vegetation < 1/10 of area ..... points = 0 ☐ **Map of Cowardin vegetation classes**	**Figure** ☐
	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.* • 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 ..... points = 0 ☐ NOTE: *See text for indicators of seasonal and permanent inundation/flooding .....* **Map of Hydroperiods**	**Figure** ☐
	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?** 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 ☐ Other _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<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 outlet ..... points = 8 ☐ • Wetland has an intermittently flowing outlet ..... points – 4 ☐ • Wetland has a highly constricted permanently flowing outlet ..... points = 4 ☐ • Wetland has a permanently flowing surface outlet ..... points = 0 ☐	
	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 ☐ • Marks are 1 ft. to < 2 ft. from surface ..... points = 4 ☐ • Marks are 6 in. to < 1 ft. from surface ..... points = 2 ☐ • No marks above 6 in. or wetland has only saturated soils ..... points = 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?** *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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p. 42)* Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***record score on p.1 of field form.***	_____

Wetland name or number: W-y_____

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 > 1/10th of area of unit draw polygons on aerial photo or map.** • Depressions present but cover < 1/10 area of wetland ..... points = 1 ☐ • No depressions present ..... points = 0 ☒	**Figure** ☐ 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)*: • Forest or shrub > 2/3 the area of the wetland..... points =10 ☐ • Forest or shrub 1/3 – 2/3 area of the wetland..... points = 5 ☐ • Ungrazed, herbaceous plants > 2/3 area of wetland ..... points = 5 ☒ • Ungrazed herbaceous plants 1/3 – 2/3 area of wetland..... points = 2 ☐ • Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland..... points = 0 ☐ **Arial photo or map showing polygons of different vegetation cover**	**Figure** ☐ 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?** 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 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>**
	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 ☒ **Aerial photo or map showing average widths**	**Figure** ☐ 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 = 2 ☒ • Vegetation does not meet above criteria..... points = 0 ☐ **Aerial photo or map showing polygons of different vegetation types**	**Figure** ☐ 2
	Total for R3 *Add the points in the boxes above*	3
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 ☐ Other _____ ☒ **YES** multiplier is 2 ☐ **NO** multiplier is 1	*(see p.50)* Multiplier 2
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from R3 by the multiplier in R4. ***Record score on p.1 of field form.***	**<u>6</u>**

Wetland name or number: W-y_____

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: C*hoose 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 ..... points = 6 ☐ • Herbaceous plants cover > 2/3 of the vegetated area ..... points = 4 ☐ • Herbaceous plants cover > 1/3 of the vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 2/3 vegetated area ..... points = 3 ☐ • Other vegetation that is not aquatic bed in > 1/3 vegetated area ..... points = 1 ☐ • Aquatic bed cover > 2/3 of the vegetated area ..... points = 0 ☐ **Map with polygons of different vegetation types**	**Figure** ☐
	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
◆	**<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 ***(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 ☐ **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 ☐ **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.***	____

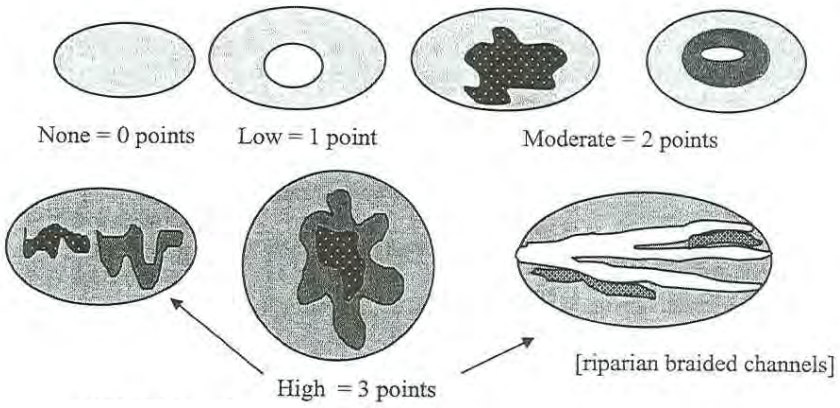
Comments:

Wetland name or number: W-y_____

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*) ..... points = 3 • Slope is between 1% and 2% ..... points = 2 • Slope is more than 2% but less than 5% ..... points = 1 • Slope is 5% or greater ..... points = 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 • 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**	**Figure** ☐
	Total for S 1 *Add the points in the boxes above*	
S 2	**Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☐ 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	*(see p. 58)* 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.***	_____
	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 S3 Add 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 _____ ☐ **YES** multiplier is 2 ☐ **NO** multiplier is 1	Multiplier
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from S3 by S4. ***Record score on p.1 of field form.***	_____

Comments: _____

Wetland name or number: W-y_____

These questions apply to wetlands of all HGM classes.		**Points** (only 1 score per box)
	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 <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 ☐ 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.....points = 3 ☐ 2 types.....points = 1 ☒ 3 types.....points = 2 ☐ 1 type .....points = 0 ☐ **Map of Cowardin vegetation classes and areas with different heights of emergents**	**Figure** ☐ 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 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 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**	**Figure** ☐ 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 points = 2 ☐ 4 – 9 species points = 1 ☒ < 4 species points = 0 ☐ # of species <u>6</u> *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.  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**	**Figure** ☐ 1

Comments: _____

Wetland name or number: W-y_____

	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*	1
	H 1 TOTAL Score – potential to provide habitat *Add the scores in the column above*	**4**
H 2	**Does the wetland have the opportunity 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 > 50% 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 = 3** ☐ 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 ..... **points = 1** ☐ 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**	**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) ☒ **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	1

Comments: _____

Wetland name or number: W-y_____

	H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm).*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections to the habitats can be disturbed.* ☐ **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-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 (*full descriptions in WDFW PHS report p. 158*). ☐ **Juniper Savannah**: All juniper woodlands (*SE part of state only; check map*) ☐ **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). ☒ **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. 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
	H 2.4 Landscape: *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 regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irritation district, or reservoirs*.)..... points = 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. ..... points = 5 ☐ • 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 ☐ • Does not meet any of the four criteria above ..... points = 0 ☐	2
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores in the columns above*	**10**
H 3	**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)* 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
◆	**Total Score for Habitat Functions** Add the points for H 1, H 2 and H 3; and ***record the result on p. 1***	**14**

Comments: _____

Wetland name or number: W-y_____

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 met.*		
SC1	**Vernal pools** *(see p.79)* Is the wetland unit **less than 4,000 ft²**, 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 ☒ **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.)? ☐ **YES** = Category II ☒ **NO** = Category III	☐ **Cat. II** ☐ **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 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. ☐ **YES** = Category I ☒ **NO** – not an alkali wetland	**Cat. I** ☐
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** ☐ Contact WNHP/DNR (see p. 79) and go to SC 3.2 **NO** ☒ 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? ☐ **YES** = Category 1 ☒ **NO** – not a natural heritage wetland	**Cat. I** ☐

Wetland name or number: W-y_____

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*)? ☐ **YES** = Category 1 bog ☒ **NO**	**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 ☐ **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*)? ☐ **YES** = Category I ☒ **NO** = go to SC 5.2	**Cat. I** ☒
	SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) as a dominant or co-dominant species? ☐ **YES** = Category I ☒ **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 (*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*) ☒ **YES** = Category II ☐ **NO** = go to SC 5.5	**Cat. II** ☒
	SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? ☐ **YES** = Category II	**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**

Appendix C – Photo Sets

A. Condit Wetland Delineation - Wetland 9: Looking East

B. Condit Wetland Delineation - Wetland 9: Looking West

C. Condit Wetland Delineation - Wetland a: Looking South

D. Condit Wetland Delineation - Wetland a: Looking North

E. Condit Wetland Delineation - Wetland y: Looking East

F. Condit Wetland Delineation - Wetland y: Looking West

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 1

A. Condit Wetland Delineation - Wetland 21: Looking West

B. Condit Wetland Delineation - Wetland 21: Looking East

C. Condit Wetland Delineation - Wetland 12 : Looking East

D. Condit Wetland Delineation - Wetland 12: Looking North

E. Condit Wetland Delineation - Wetland x: Looking North

F. Condit Wetland Delineation - Wetland x: Looking East

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 2

A. Condit Wetland Delineation - Wetland 10: Looking North

B. Condit Wetland Delineation - Wetland 10: Looking East

C. Condit Wetland Delineation - Wetland 6a: Looking North

D. Condit Wetland Delineation - Wetland 6a: Looking East

E. Condit Wetland Delineation - Wetland 6b: Looking North

F. Condit Wetland Delineation - Wetland 6b: Looking West

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 3

A. Condit Wetland Delineation - Wetland RW-1: Looking East

B. Condit Wetland Delineation - Wetland RW-1: Looking West

C. Condit Wetland Delineation - Wetland RW-2: Looking West

D. Condit Wetland Delineation - Wetland RW-2: Looking West

E. Condit Wetland Delineation - Wetland RW-3: Looking West

F. Condit Wetland Delineation - Wetland RW-3: Looking North

TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 4

A. Condit Wetland Delineation - Wetland v: Looking West

B. Condit Wetland Delineation - Wetland v: Looking West

C. Condit Wetland Delineation - Typical Upland

D. Condit Wetland Delineation - Buck Creek: Perennial Stream

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

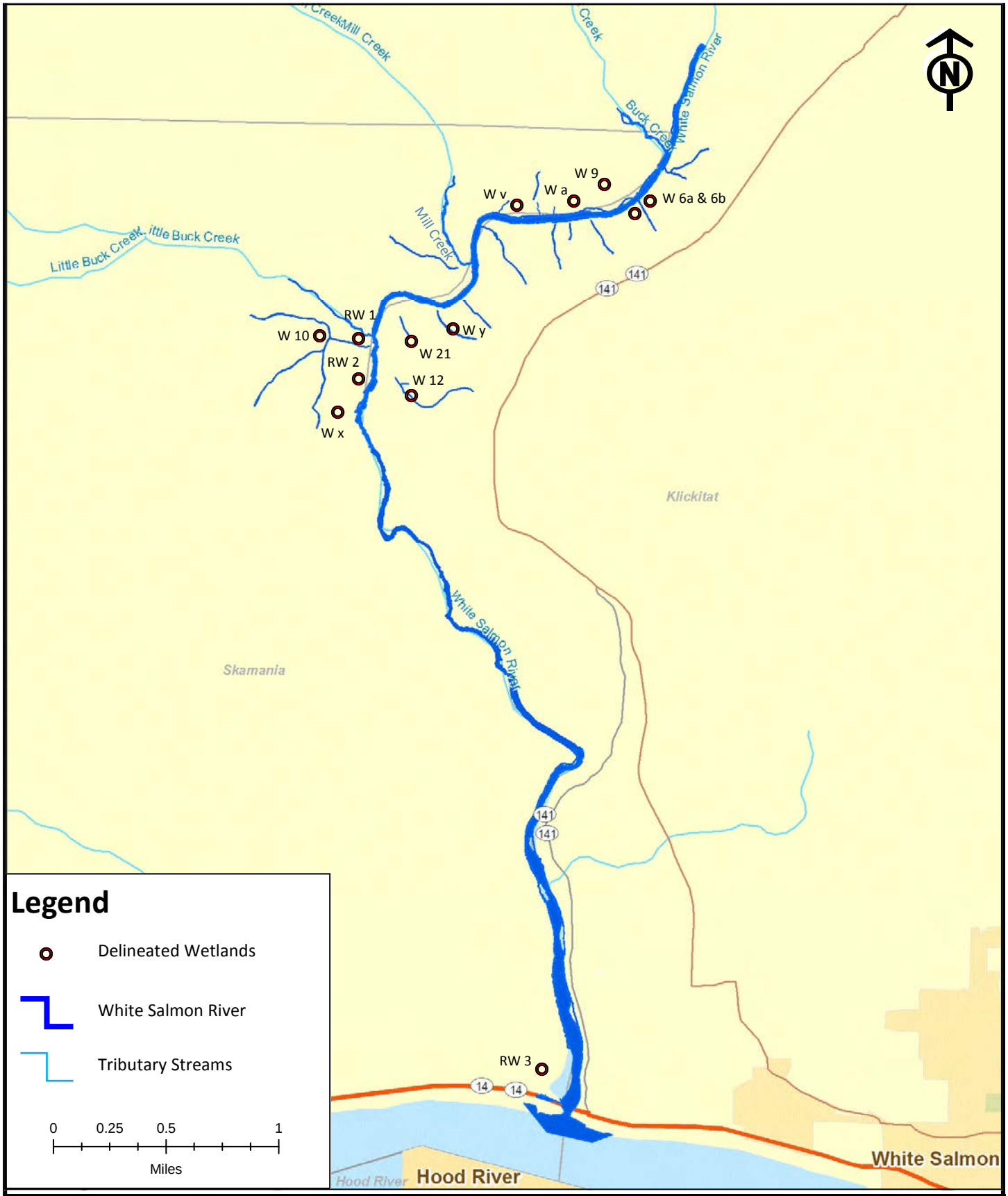
TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 5

Appendix D – Map Sheet Figures



TETRA TECH	Project: 100-SET-T34322.03 DRAWN: 8/31/2016 DRAWN BY: SCC CHECKED BY: DM FILE NAME: Location Map	CONDIT WETLAND DELINEATIONS LOCATION MAP Skamania and Klickitat County, WA	FIGURE 2

Condit 2016 Wetland Delineation

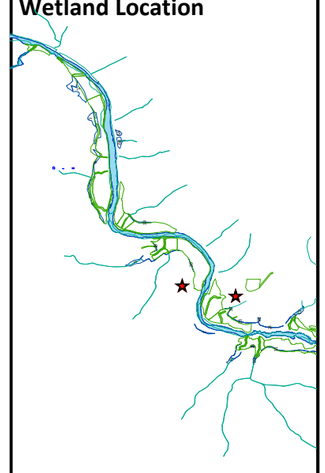
Figure 3

Locations 1 and 2
Wetlands 10,12,21,x,y, RW-1, RW-2

Legend

- Soil Sample Points
- 2016 Wetlands
- Perennial Streams
- Intermittent Streams

Wetland Location



CONDIT HYDROELECTRIC PROJECT DECOMMISSIONING
WHITE SALMON, WA

100-SET-T34322.03

TETRA TECH

Condit 2016 Wetland Delineation

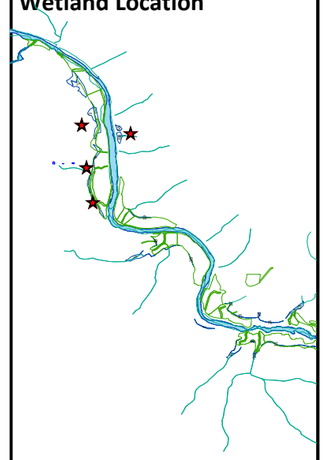
Figure 4

Location 5
Wetlands 6a, 6b,9,a,v

Legend

- Soil Sample Points
- 2016 Wetlands
- Perennial Streams
- Intermittent Streams

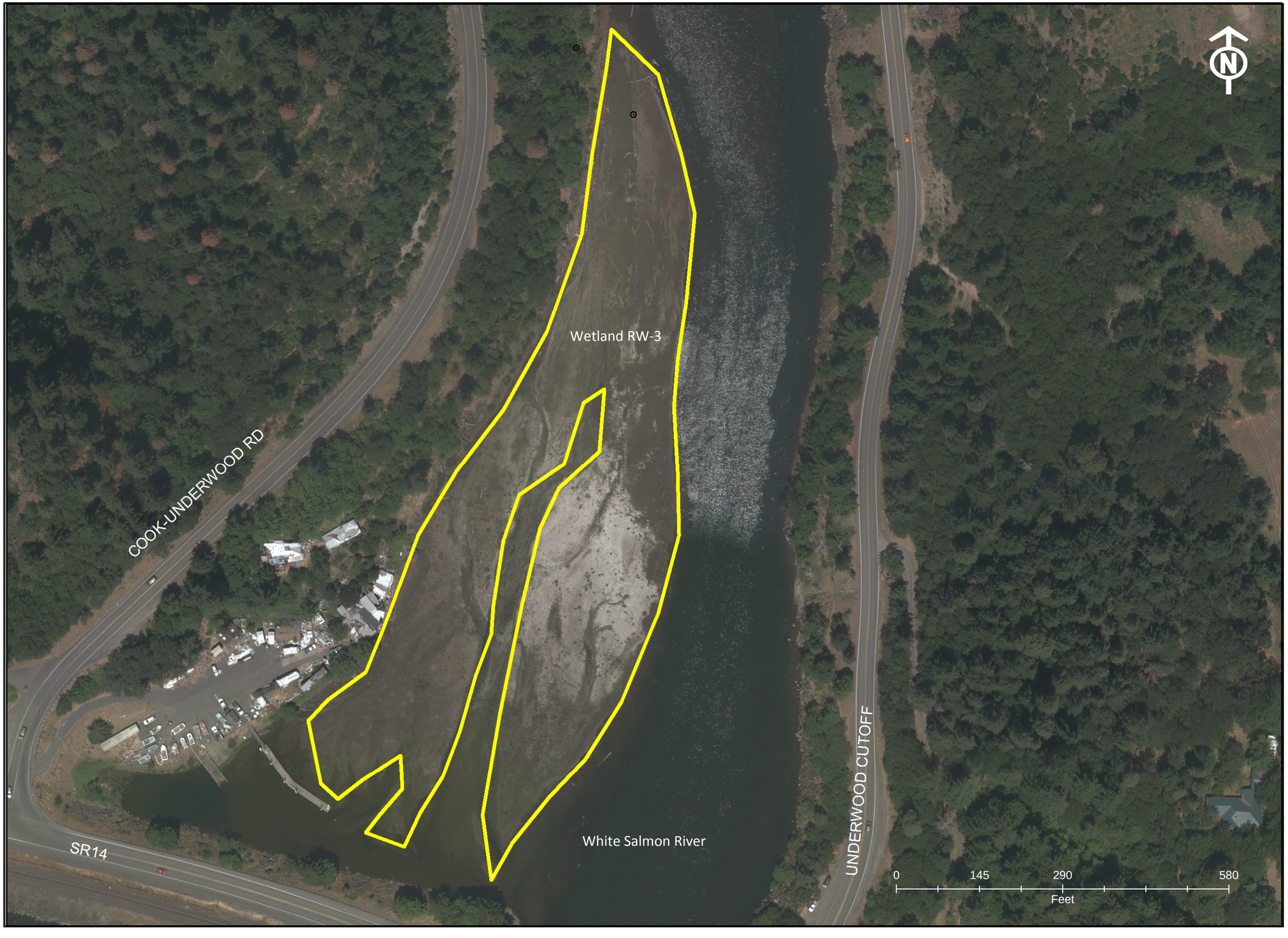
Wetland Location



CONDIT HYDROELECTRIC PROJECT DECOMMISSIONING WHITE SALMON, WA

Project 100-SET-T34322.03

TETRA TECH



Condit 2016 Wetland Delineation

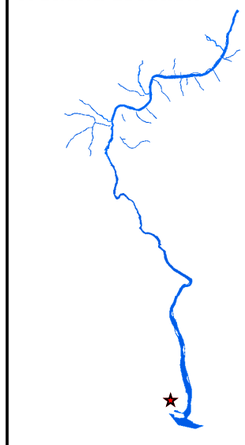
Figure 5

In-lieu Site Wetland RW-3

Legend

- Streams
- 2014 Delineated Wetlands
- Soil Sample Points

Wetland Location



CONDIT HYDROELECTRIC PROJECT DECOMMISSIONING
WHITE SALMON, WA

Project: 100-SET-T34322.03

TETRA TECH

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

Month	Temperature (Degrees F.)			Precipitation (Inches)				
	avg daily max	avg daily min	avg	avg	30% chance will have less than	30% chance will have more than	avg # of days w/.1 or more	avg total snow fall
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
Annual	-----	-----	-----	------			--	----
Average				------	------	------	--	----
Average	-----	-----	-----		------	------		

GROWING SEASON DATES

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
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	
11	M4.15	1.97	M6.53	M4.73	M3.32	M0.30	M0.56	0.06	M0.16	M2.95	M3.75	M4.96	33.44
12	M5.90	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
14	M3.21	M17.35	M13.17	M2.87	M1.91	M0.93	M0.54	1.13	0.55	M4.63	3.62	M5.14	55.05
15	M3.54	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

USDA Field Office Climate Data

WETS Station : MT ADAMS RS, WA5659 Creation Date: 09/20/2016
Latitude: 4560 Longitude: 12132 Elevation: 01950
State FIPS/County(FIPS): 53039 County Name: Klickitat
Start yr. - 1971 End yr. - 2000

Month	Temperature (Degrees F.)			Precipitation (Inches)				
	avg daily max	avg daily min	avg	avg	30% chance will have less than	30% chance will have more than	avg # of days w/.1 or more	avg total 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

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *	5/15 to 9/28 135 days	6/ 6 to 9/12 97 days	
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													
24				0.22	1.12	0.00	0.15	1.89	4.67	6.17	M2.20		16.42
25	M8.30	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
31	M8.79	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
33	10.56	6.00	7.06	0.13	3.65	2.09	0.02	0.39	3.42	6.03	2.06	27.37	68.78
34	11.22	1.80	5.92	1.20	0.77	0.11	0.00	0.75	1.37	9.55	12.75	11.88	57.32
35	M6.51	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 M0.98 1.33 M0.79 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
4810.10 8.60   M2.83 0.51 0.54 2.49 M2.91 M8.51 10.90
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
5020.78 8.47 M8.79 M2.63 0.31 0.59 0.36 0.21 M1.13 M12.65 10.77 M8.95
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
55 3.19 3.80 5.61 3.84 0.46 0.45 0.70 0.00 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
60M3.93   M7.61 M5.04 3.07 0.34 0.00 0.95 0.30 2.40 M13.47 M3.95
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
81   M7.05 M2.07 2.29   3.45   0.00 2.77   M6.90 M12.42
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
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ATTACHMENT 2

Photos of the Riparian Benches and Planting Areas

A. Condit Riparian Survey - L1C - Spring Creek: Lower Reach

B. Condit Riparian Survey - L1C _ Spring Creek: Interior

C. Condit Riparian Survey - L1C - Spring Creek: Upper Reach

D. Condit Riparian Survey - L1C - Spring Creek - Upper Reach

E. Condit Riparian Survey - L1C - Spring Creek

TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 1

A. Condit Riparian Survey - L1E - Little Buck Creek: Fall Zone

B. Condit Riparian Survey - L1E - Little Buck Creek: Interior

C. Condit Riparian Survey - L1E - Little Buck Creek: Lower

D. Condit Riparian Survey - L1E - Little Buck Creek: Upper

E. Condit Riparian Survey - L1C - Spring Creek and L1E - Little Buck Creek

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 2

A. Condit Riparian Survey - L1G - Condit Creek: Lower Reach

B. Condit Riparian Survey - L1G - Condit Creek: Upper Reach

C. Condit Riparian Survey - L1G - Condit Creek

D. Condit Riparian Survey - L1G - Condit Creek: Mid Reach

E. Condit Riparian Survey - L1G - Condit Creek

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 3

A. Condit Riparian Survey - L2B - Unnamed 4: Upper Reach

B. Condit Riparian Survey - L2B - Unnamed 4: Mid Reach

C. Condit Riparian Survey - L2B - Unnamed 4: Interior

D. Condit Riparian Survey - L2B - Unnamed 4: Lower Reach

E. Condit Riparian Survey - L2B - Unnamed 4

F. Condit Riparian Survey - L2B - Unnamed 4: Hairgrass

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 4

A. Condit Riparian Survey - L2D - Unnamed Creek 5

B. Condit Riparian Survey - L2D - Unnamed Creek 5: Interior

C. Condit Riparian Survey - L2D - Unnamed Creek 5: Upper

D. Condit Riparian Survey - L2D - Unnamed Creek 5: Lower

E. Condit Riparian Survey - L2B - Unnamed Creek 4 and L2D - Unnamed Creek 5

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 5

A. Condit Riparian Survey - L2E - Riverside Riparian Bench

B. Condit Riparian Survey - L2E - Riparian Bench: Downstream

C. Condit Riparian Survey - L2E - Riparian Bench: Upstream

D. Condit Riparian Survey - L2E - Riparian Bench: Upstream

E. Condit Riparian Survey - L2E - Riparian Bench: ELJ

F. Condit Riparian Survey - L2E - Riparian Bench: Gully

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 6

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

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 7

A. Condit Riparian Survey - L3B - Riverside Riparian Bench

B. Condit Riparian Survey - L3B - Riparian Bench: Downstream

C. Condit Riparian Survey - L3B - Riparian Bench: Deposition

D. Condit Riparian Survey - L3B - Riparian Bench: Upstream

E. Condit Riparian Survey - L3B - Riverside Riparian Bench

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 8

A. Condit Riparian Survey - L3E Riverside Riparian Bench

B. Condit Riparian Survey - L3E Riparian Bench: Upstream

C. Condit Riparian Survey - L3E Riparian Bench: Downstream

D. Condit Riparian Survey - L3E Riparian Bench: Riverside

E. Condit Riparian Survey - L3E Riparian Bench 12/9/2016

F. Condit Riparian Survey - L3E Riparian Bench: Looking West

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 9

A. Condit Riparian Survey - L3F - Mill Creek: Above the Mouth

B. Condit Riparian Survey - L3F - Mill Creek: Upstream

C. Condit Riparian Survey - L3F - Mill Creek: Mid Reach

D. Condit Riparian Survey - L3F - Mill Creek: Upper Reach

E. Condit Riparian Survey - L3F - Mill Creek: Mid Reach

F. Condit Riparian Survey - L3F - Mill Creek: Looking West

TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 10

A. Condit Riparian Survey - Location 3 E, F, & H - 11/04/2014

B Condit Riparian Survey - Location 3 E, F, & H - 12/14/2015

C. Condit Riparian Survey - Location 3 E, F, & H - 9/14/2016

TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 11

A. Condit Riparian Survey - L3H - Riverside Riparian Bench

B. Condit Riparian Survey - L3H - Riparian Bench: Deposition

C. Condit Riparian Survey - L3H - Riparian Bench: Downstream

D. Condit Riparian Survey - L3H - Riparian Bench: Upstream

E. Condit Riparian Survey - L3H - Riparian Bench: Looking West

TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 12

A. Condit Riparian Survey - L4B - Riverside Riparian Zone

B. Condit Riparian Survey - L4B - Riparian Zone: Upstream

C. Condit Riparian Survey - L4B - Riparian Zone: Upstream

D. Condit Riparian Survey - L4B - Riparian Zone: ELJ

E. Condit Riparian Survey - L4B - Riparian Zone: Downstream

F. Condit Riparian Survey - L4B-Riparian Zone: Looking South

TETRA TECH

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

PROJECT 100-SET-T34322.03 | **Photo Set 13**

A. Condit Riparian Survey - L4D - Unnamed Stream 6: Lower

B. Condit Riparian Survey - L4D - Unnamed Stream 6: Mid

C. Condit Riparian Survey - L4D - Unnamed Stream 6: Upper

D. Condit Riparian Survey - L4D - Unnamed Stream 6: Interior

E. Condit Riparian Survey - L4D - Unnamed Stream 6 and Location 4B

TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 14

A. Condit Riparian Survey - L5C - Unnamed Stream 3: Upper E

B. Condit Riparian Survey - L5C - Unnamed Stream 3: Upper W

C. Condit Riparian Survey - L5C - Unnamed Stream 3: Lower

D. Condit Riparian Survey - L5C - Unnamed Stream 3Transition

E. Condit Riparian Survey - L5C - Unnamed Stream Looking N

F. Condit Riparian Survey - L5C - Unnamed Stream: 12/20/2014

TETRA TECH

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

PROJECT 100-SET-T34322.03

Photo Set 15

A. Condit Riparian Survey - L5D Unnamed Stream 2: Upper

B. Condit Riparian Survey - L5D Unnamed Stream 2: Transition

C. Condit Riparian Survey - L5D Unnamed Stream 2: Mid

D. Condit Riparian Survey - L5D Unnamed Stream 2: Mid

E. Condit Riparian Survey - L5D Unnamed Stream 2: Interior

F. Condit Riparian Survey - L5D Unnamed Stream 2: Lower

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 16

A. Condit Riparian Survey - L5E - Unnamed Stream 1: Upper N

B. Condit Riparian Survey - L5E - Unnamed Stream 1: Upper S

C. Condit Riparian Survey - L5E - Unnamed Stream 1: Mid

D. Condit Riparian Survey - L5E - Unnamed Stream 1: Mid

E. Condit Riparian Survey - L5E - Unnamed Stream 1: Lower

F. Condit Riparian Survey - L5E - Unnamed Stream 1: Lower

TETRA TECH

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

PROJECT 100-SET-T34322.03 | **Photo Set 17**

A. Condit Riparian Survey - L5F Riverside Riparian Bench:

B. Condit Riparian Survey - L5F Riparian Bench: Cottonwood

C. Condit Riparian Survey - L5F Riparian Bench:Upstream

D. Condit Riparian Survey - L5F Riparian Bench: Downstream

E. Condit Riparian Survey - L5F Riparian Bench: 12/14/2015

F. Condit Riparian Survey - L5F Riparian Bench: Looking West

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 18

A. Condit Riparian Survey - L5I - Riverside Riparian Bench

B. Condit Riparian Survey - L5I - Riparian Bench: 12/14/2016

C. Condit Riparian Survey - L5I - Riparian Bench: Deposition

D. Condit Riparian Survey - L5I - Riparian Bench: 12/14/2016

E. Condit Riparian Survey - L5I - Riparian Bench: Upstream

F. Condit Riparian Survey - L5I - Riparian Bench: Downstream

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 19

A. Condit Riparian Survey - L6C - Buck Creek: At the Mouth

B. Condit Riparian Survey - L6C - Buck Creek: Upstream

C. Condit Riparian Survey - L6C - Buck Creek: Upstream

D. Condit Riparian Survey - L6C - Buck Creek: Stabilization

E. Condit Riparian Survey - L6C - Buck Creek: Below Mouth

F. Condit Riparian Survey - L6C - Buck Creek: 12/14/2015

TETRA TECH

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

PROJECT 100-SET-T34322.03	Photo Set 20