

# WETLAND AND STREAM ASSESSMENT REPORT

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## I-90 Eastbound Weigh Station

Kittitas, Washington

September 5, 2023

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## Acronyms and Abbreviations

DNR	Washington Department of Natural Resources
Ecology	Washington State Department of Ecology
GIS	geographic information system
HGM	hydrogeomorphic wetland classification
I-90	Interstate 90
LRR	land resource area
MLRA	major land resource area
MP	milepost
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PEM	palustrine emergent
PSS	palustrine scrub-shrub
USACE	U.S. Army Corps of Engineers

USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDFW	Washington State Department of Fish and Wildlife
WOTUS	Water of the United States
WSDOT	Washington State Department of Transportation

# 1. Introduction

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This report was prepared for the Washington State Department of Transportation (WSDOT) South Central Region for a proposed project to construct a new weigh scale/inspection station, truck parking facility, and virtual weigh-in-motion facility on Interstate 90 (I-90) between milepost (MP) 79.4 and MP 80.2.

This report identifies and describes wetlands, streams, and other waters within the study area of the project and will help WSDOT avoid and minimize impacts, apply for permits, and compensate for unavoidable impacts.

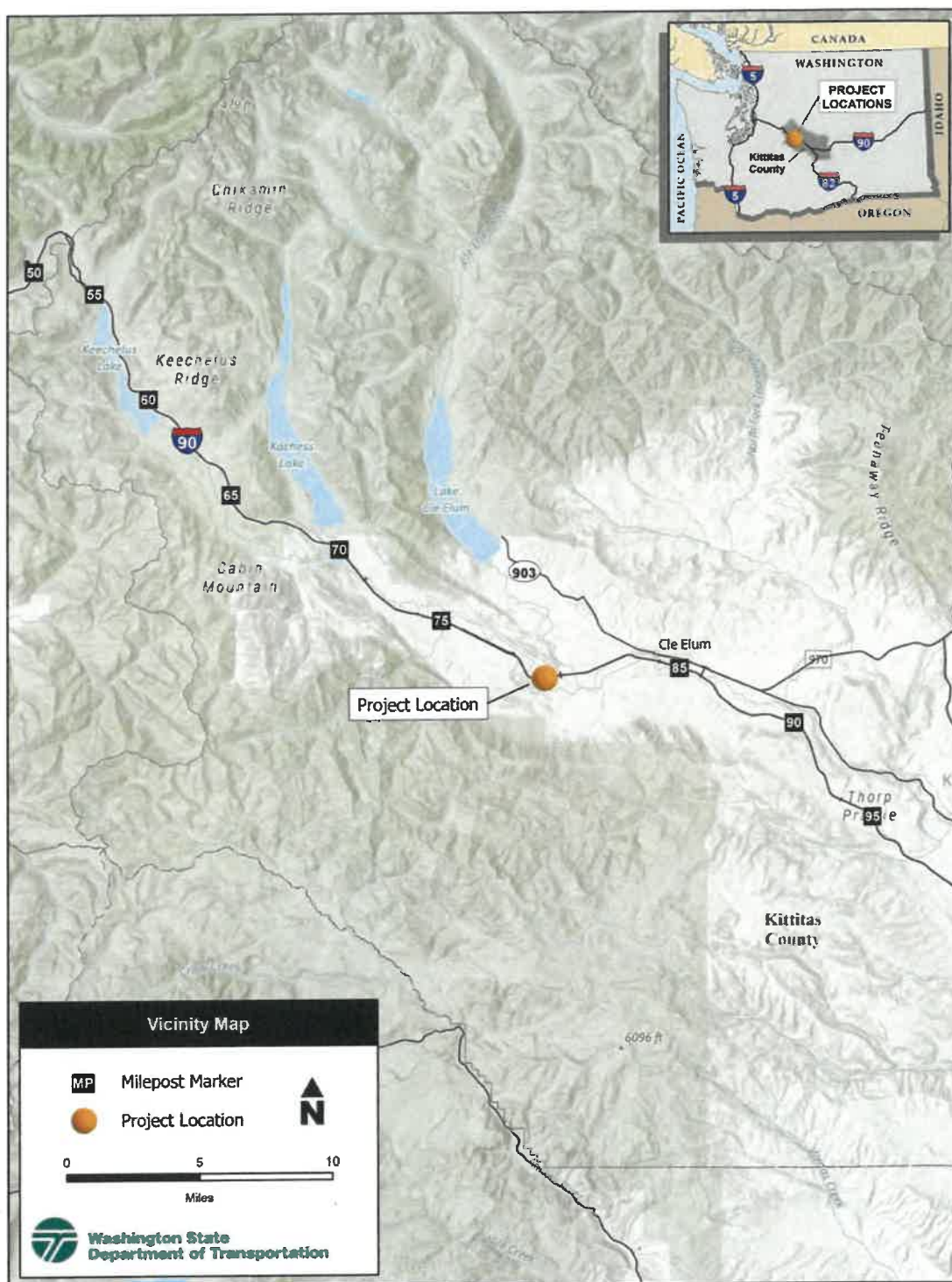
## 2. Proposed Project

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### 2.1. Project Location

The project is located adjacent to I-90 near MP 80 just west of Cle Elum in Kittitas County, Washington (Figure 1). The project is in land resource region (LRR) A – Northwestern Forest, Forage, and Specialty Crop Region and major land resource area (MLRA) 6 – Cascade Mountains, Eastern Slope.

Figure 1. Vicinity map.



## **2.2. Project Purpose and Description**

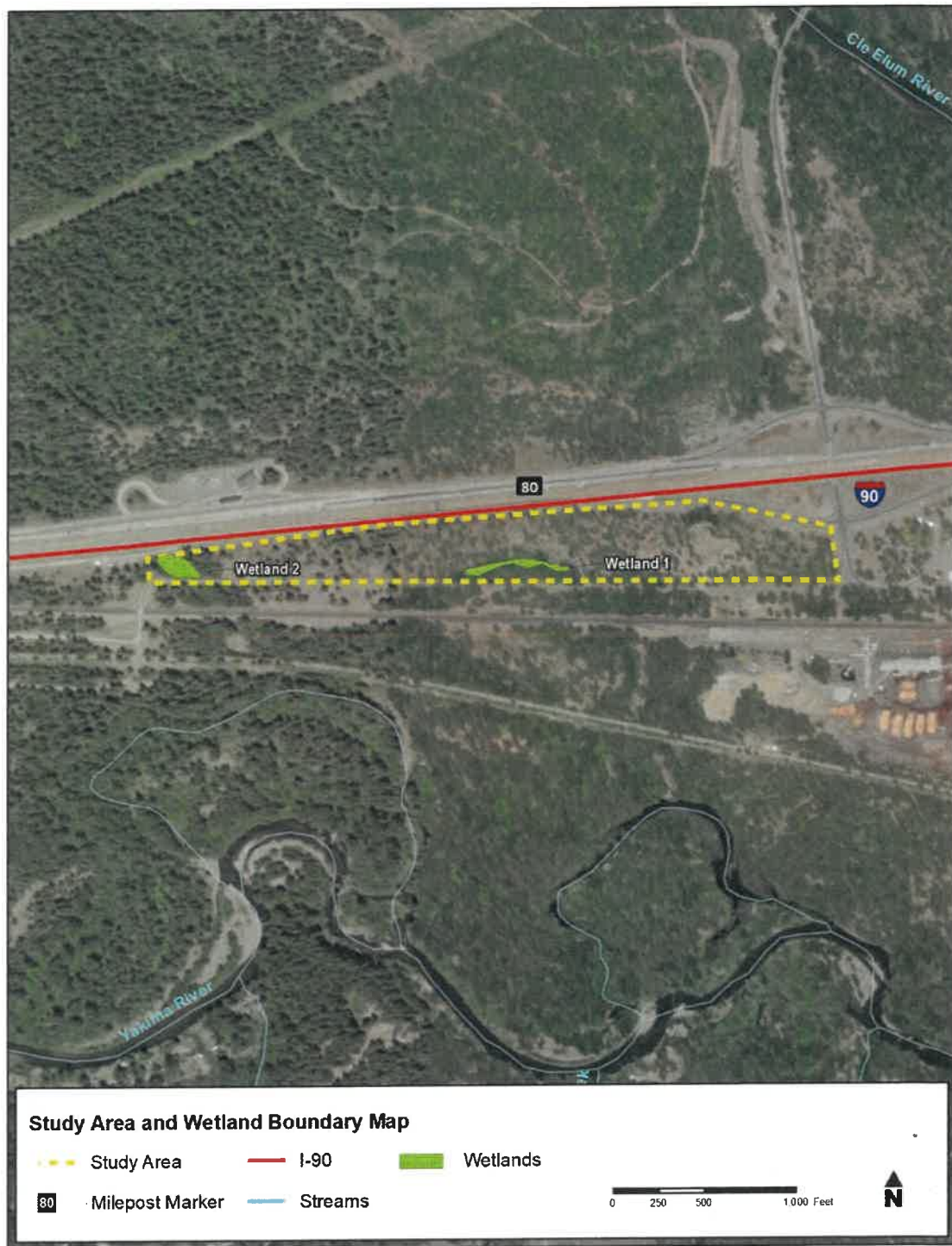
WSDOT is proposing to demolish the abandoned westbound Washington State Patrol weigh scale and truck parking facility and construct a new weigh scale/inspection station, truck parking, and virtual weigh-in motion facility between eastbound I-90 MP 79.4 and MP 80.2. The facility will consist of 6 acres of paved surface, a small scale-house, inspection building, vault toilet, and associated equipment. Approximately 8 acres of upland Ponderosa pine forest located directly adjacent to the I-90 eastbound lanes and the exit 80 off-ramp will be cleared, three acres of which will be revegetated. The weigh station will have native and ornamental plantings and some disturbed areas will be covered with wood mulch.

## **2.3. Study Area**

The study area for this report includes the area bounded by I-90 to the north and Leisure Land Lane to the south adjacent to I-90 from MP 79.4 to MP 80.2 (Figure 2). Two wetlands and no streams were identified within the study area. Should proposed project impact areas change and extend beyond the study area, wetland, stream, and other waters assessment will need to occur in those additional areas.



Figure 2. Study area showing approximate wetland and stream locations.



## 3. Methods

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### 3.1. Review of Existing Information

The following data sources were reviewed for information on precipitation, topography, drainage patterns, soils, vegetation, potential or known wetlands and streams, and sensitive species or habitats in the project vicinity:

- Natural Resources Conservation Service (NRCS) Climate Data for Kittitas County, Station 53037, Washington (NRCS 2023a) (Appendix A-1 and A-2).
- U.S. Geological Survey (USGS) topographic maps (USGS 2023.) (Appendix A-3).
- National Wetlands Inventory (NWI) maps (USFWS 2023) (Appendix A-4).
- NRCS, Soil Survey of Kittitas County Washington (NRCS 2023b) (Appendix A-5).
- Wetlands of High Conservation Value and Washington State threatened, endangered, and sensitive plants (DNR 2023a)
- Federally listed threatened, endangered, or candidate wildlife species (USFWS 2022) and proposed and designated critical habitat (USFWS 2022, NOAA 2023)
- WDFW Priority Habitats and Species (WDFW 2023).

### 3.2. Field Investigation

Wetlands, streams, and other waters assessment fieldwork was completed April 14, 2023 by wetland biologist Josh Zylstra while walking the extent of the study area.

Boundaries of waters within the study area and sample points were geospatially surveyed with a Motorola G7 Power mobile phone, running the mapit GIS application, paired via Bluetooth® with a Juniper Systems Geode™ Multi-Global Navigation Satellite System receiver capable of sub-meter horizontal accuracy. Boundaries of waters within the study area were marked with pink flags.

Scientific plant names in this report are from the USACE National Wetland Plant List, version 3.4 (USACE 2020).

Kittitas County buffers (Kittitas County 2021) were applied to wetlands, streams, and other waters in the project, in conjunction with Washington State Department of Ecology (Ecology) tables for adjusting rating scores (2004 to 2014 versions with July 2018 modifications) (Ecology 2018) and the Washington State Department of Natural Resources (DNR) Forest Practices Rules, water type classifications (DNR 2023b). Buffers were applied based on high intensity land use.

#### 3.2.1. Wetlands

Wetlands were delineated using routine methods described in:

- Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987).
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010).

Wetlands were classified using the U.S. Fish and Wildlife Service (USFWS) classification system (Cowardin et al. 1979) and the hydrogeomorphic classification system (HGM) (Brinson

1993). Wetlands were rated using the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Hruby 2014). The Kittitas County Code (Kittitas County 2021) references the 2014 Rating System. Wetland functions were assessed using the Wetland Functions Characterization Tool for Linear Projects (BPJ tool) (Null et al. 2000).

### **3.2.2. Streams**

Potential streams were evaluated based on on-site observations of an ordinary high water mark using USACE guidance (USACE 2005; USACE 2014).

Because no streams were identified within the study area, no additional classification or fish presence evaluations were performed.

## **4. Existing Conditions**

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### **4.1. Landscape and Watershed Setting**

The project occurs within the Yakima River Basin with a drainage area of about 6,200 square miles on the east slopes of the Cascade Mountain Range, ranging in elevation from about 8,000 feet at the upper headwaters to about 400 feet near the mouth of the Yakima River. In the upper parts of the basin, the Yakima River passes through forested lands. In the lower parts of the basin, the river follows a meandering course through hilly and flat agricultural lands. Major tributaries to the Yakima River include the Cle Elum, Kachess, Teanaway, Bumping, American, Tieton, and Naches Rivers; there are also numerous small streams tributary to the river. Agricultural is the predominant economic activity in the basin, followed by recreational and timber use. The project occurs within Water Resource Inventory Area 39 (Upper Yakima).

### **4.2. Climate**

The project area has a humid continental climate, Köppen subtype Dsb (Peel et al. 2007). Cle Elum, Washington gets 23 inches of precipitation and 83 inches of snow, on average, per year (WRCC 2023).

### **4.3. Precipitation**

Chapter 19 of the Engineering Field Handbook (NRCS 2015) was referenced to determine if precipitation that fell within three months of the site visit was within the normal range of the 30-year average. Drier than normal precipitation conditions prevailed during all three months prior to field work (Appendix A-1) and moderate precipitation was recorded in the ten days preceding field work (Appendix A-2).

### **4.4. Growing Season**

Using the NRCS Wetlands Climate Table (WETS) for the nearest station to the project (Cle Elum, WA), the growing season for the project area (temperatures above 28°F, 5 out of 10 years) was approximated to be between May 1 and September 30, or a total of 152 days (NRCS 2023a). The field investigation took place prior to the growing season as evidenced by lack of active growth of both herbaceous and woody plant species.

## 4.5. Wetlands

A total of two wetlands were identified and delineated within the study area. An overview of each wetland is provided below (Table 1). See the delineation data sheets (Appendix B), wetland rating forms (Appendix C), functional assessment summaries (Appendix D), and plan sheets showing wetland locations (Appendix E) for additional details.

**Table 1. Wetlands within the project corridor.**

Wetland	Cowardin <sup>a</sup>	HGM <sup>b</sup>	Ecology Rating <sup>c</sup>	Kittitas County Rating	Wetland Size (acre)	Buffer Width (feet) <sup>d</sup>
1	PSS	Depressional	III	III	0.35	150
2	PSS/PEM	Depressional	II	II	0.43	200

<sup>a</sup> NWI Class based on vegetation: PSS = palustrine scrub-shrub, PEM = palustrine emergent (Cowardin et al. 1979)

<sup>b</sup> Hydrogeomorphic Wetland Classification (Brinson 1993)

<sup>c</sup> Ecology rating (Hruby 2014)

<sup>d</sup> Kittitas County wetland buffer width based on wetland category and high intensity land use (Kittitas County 2021)

### 4.5.1. Vegetation

The typical dominant vegetation in the study area wetlands is red osier dogwood shrubs with balsam poplar trees at the wetland margins. Wetland 2 also has areas of emergent vegetation comprised of red canary grass and red tinge bulrush.

### 4.5.2. Soils

The Kittitas County soil survey (NRCS 2023b) identifies two map units within the study area: (214) Haplosaprists, 0 to 2 percent slopes; and (238) Racker ashy sandy loam, 0 to 5 percent slopes. Of those, the Haplosaprists map unit is listed on the National Hydric Soils List (NRCS 2023c). Project area soil map units are described in further detail in Appendix A-5.

### 4.5.3. Hydrology

Wetland hydrology in the study area is supported by a seasonal high water table and stormwater runoff from adjacent roads.

### 4.5.4. Wetland Functions

Wetlands in the study area are depressional with seasonally ponded areas providing moderate to high hydrologic functions and low to moderate water quality functions. Habitat functions are low to moderate as provided by persistent native vegetation and other habitat features but limited by disturbance from adjacent roads.

**Table 2. Functions and values of wetlands in the study area.**

<b>Function/Value<sup>a</sup></b>	<b>W1</b>	<b>W2</b>
Sediment Removal	-	X*
Nutrient and Toxicant Removal	-	X*
Flood Flow Alteration	X	X
Erosion Control & Shoreline Stabilization	-	-
Production & Export of Organic Matter	-	-
General Habitat Suitability	X*	X*
Habitat for Aquatic Invertebrates	-	X
Habitat for Amphibians	-	X
Habitat for Wetland-Associated Mammals	-	-
Habitat for Wetland-Associated Birds	-	-
General Fish Habitat	-	-
Native Plant Richness	-	-
Educational or Scientific Value	-	-
Uniqueness and Heritage	-	-

<sup>a</sup> "-" indicates that the function is not present

"X" indicates the function is present

"X\*" indicates a principal function of the wetland





**Figure 3. Wetland 1 photo**

**Table 3. Wetland 1 summary**

Description					
Delineation date:	April 14, 2023				
Location:	47.182215, -121.021654				
Size:	0.35 acres				
Local jurisdiction:	Kittitas County				
Data sheets:	Appendix B; W1-SP1, W1-SP2				
Classification					
Cowardin:	PSS				
HGM:	Depressional				
Rating:	Kittitas County: III		Ecology: III		
Buffer width:	Kittitas County: 150		Ecology: 80 ft (Cat III with low habitat function)		
Vegetation					
Dominant plants:	Balsam poplar, red osier dogwood				
Indicators:	Dominance test, prevalence Index				
Soils					
Description:	Depth (in)	Texture	Matrix Color	Redox Features	Remarks
	0-3	Loam	10YR 4/1	-	-
	3-6	Loam	10YR 4/2	10YR 4/6 (20%)	Redox prominent
	6-12	Loam	10YR 4/2	10YR 4/6 (10%) 10YR 3/2 (15%)	Redox prominent
Indicators:	Depleted matrix				
Hydrology					
Precipitation:	Prior 3 months: Dry (6)		Prior 10 days: 0.38 inches		
Source:	Surface water runoff into a depression with no outlet. The location is likely a relict oxbow of the Yakima River.				
WOTUS nexus:	Isolated				
Indicators:	Geomorphic position, FAC-neutral test				
Functions					
Water Quality:	7 – Moderate				
Hydrologic:	5 – Low				
Habitat:	5 – Low				
Buffer condition					
Ponderosa pine forest interspersed with shrubs and roadside grasses. Forested buffer provides screening and habitat functions. Mowed and managed roadside edges provide little buffering function.					



**Figure 4. Wetland 2 photo**



**Table 4. Wetland 2 summary**

Description					
Delineation date:	April 14, 2023				
Location:	47.182109, -121.029125				
Size:	0.43 acres				
Local jurisdiction:	Kittitas County				
Data sheets:	Appendix B; W2-SP1, W2-SP2				
Classification					
Cowardin:	PEM / PSS				
HGM:	Depressional				
Rating:	Kittitas County: II		Ecology: II		
Buffer width:	Kittitas County: 200		Ecology: 150 ft (Cat II with moderate habitat function)		
Vegetation					
Dominant plants:	Balsam poplar, red osier dogwood, red-tinge bulrush, reed canary grass				
Indicators:	Dominance test, prevalence Index				
Soils					
Description:	Depth (in)	Texture	Matrix Color	Redox Features	Remarks
	0-10	Muck	10YR 3/1	-	-
	10-16	Silt loam	10YR 5/1	10YR 4/3 (5%)	Redox distinct
Indicators:	Depleted matrix				
Hydrology					
Precipitation:	Prior 3 months: Dry (6)		Prior 10 days: 0.38 inches		
Source:	Groundwater, surface runoff from the adjacent roads, and a culvert from the I-90 median. Surface water collects in a depression with no outlet.				
WOTUS nexus:	Isolated				
Indicators:	Surface water, high-water table, saturation, water-stained leaves, FAC-neutral test				
Functions					
Water Quality:	8 – High				
Hydrologic:	6 – Moderate				
Habitat:	6 – Moderate				
Buffer condition					
Ponderosa pine forest interspersed with shrubs and roadside grasses. Forested buffer provides screening and habitat functions. Mowed and managed roadside edges provide little buffering function.					

## 4.6. Streams

No streams were documented in the study area. The Yakima River, approximately 1500 feet to the south, is the nearest navigable water of the United States to the study area.

## 5. Limitations

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This wetland and stream assessment report documents the investigation, best professional judgment, and conclusions of WSDOT based on the site conditions encountered at the time of this study. The wetland and stream delineation was performed in compliance with accepted standards for professional wetland biologists and applicable federal, state, and local laws and ordinances, and WSDOT policies and guidance. The information contained in this report is correct and complete to the best of our knowledge. It should be considered a preliminary jurisdictional determination of wetlands and other waters until it has been reviewed and approved in writing by the appropriate jurisdictional authorities. The final determination of the wetland boundary, classification, and required setback and buffer will be made by local, state, and federal jurisdictions.

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# Appendix A. Background Information

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Appendix A includes the following sub-appendices:

- A-1 Comparison of Observed and Normal Precipitation for Cle Elum, Washington
- A-2 Daily Precipitation for 10 Days Preceding Fieldwork, Cle Elum, Washington
- A-3 USGS Topographic Map
- A-4 National Wetland Inventory Map
- A-5 NRCS Soil Survey Map

## Appendix A-1. Comparison of Observed and Normal Precipitation

The Regional Delineation Supplement Version 2.0 (USACE 2010) recommends using methods described in Chapter 19 in Engineering Field Handbook (NRCS 2015) to determine if precipitation occurring in the three full months prior to the site visit was normal, drier than normal, or wetter than normal. Actual rainfall is compared to the normal range of the 30-year average. The following table shows this information.

### Monthly precipitation data for Cle Elum, Washington.

		Long-term rainfall records <sup>a</sup>			Rain fall <sup>a</sup>	Condition dry, wet, normal <sup>b</sup>	Condition Value	Month weight value	Product of previous two columns
		3 yrs. in 10 less than	Average	3 yrs. in 10 more than					
1 <sup>st</sup> prior month	Mar	1.14	1.69	2.02	0.47	Dry	1	3	3
2 <sup>nd</sup> prior month	Feb	1.56	2.62	3.18	1.24	Dry	1	2	2
3 <sup>rd</sup> prior month	Jan	2.25	3.72	4.51	1.32	Dry	1	1	1
Sum									6

<sup>a</sup> NRCS 2023a

<sup>b</sup> Conditions are considered normal if they fall within the low and high range around the average.

Note: If sum is

Condition value:

6 - 9 then prior period has been drier than normal	Dry (D)	= 1
10 - 14 then period has been normal	Normal (N)	= 2
15 - 18 then period has been wetter than normal	Wet (W)	= 3

Conclusions: Drier than normal precipitation conditions were present prior to the April 14, 2023 field visit.

## Appendix A-2. Daily Precipitation for 10 Days Preceding Fieldwork, Cle Elum, Washington

To determine if light, moderate, or heavy precipitation occurred in the 10 days prior to field work, the 10 day total is compared to 1/3 of the monthly average precipitation for the month evaluated (NRCS 2023a).

**Daily precipitation data preceding the April 14, 2023 field visit for Cle Elum, Washington.**

Date (2023)	Daily Precipitation (inches) <sup>a</sup>
April 13	0.00
April 12	0.00
April 11	0.07
April 10	0.26
April 9	0.00
April 8	0.00
April 7	0.05
April 6	T
April 5	0.00
April 4	0.00
Sum	0.38

<sup>a</sup> NRCS 2023a

"T" values indicate a trace value was recorded.

Conclusions: The month of April averages 1.35" of precipitation in Cle Elum, WA (NRCS 2023a), so 1/3 of that monthly average would be 0.45" of precipitation. The 0.38" of precipitation recorded in the 10 days prior to the April 14, 2023 field visit would be close to typical conditions and therefore a "moderate" amount of precipitation.

## Appendix A-3. USGS Topographic Map

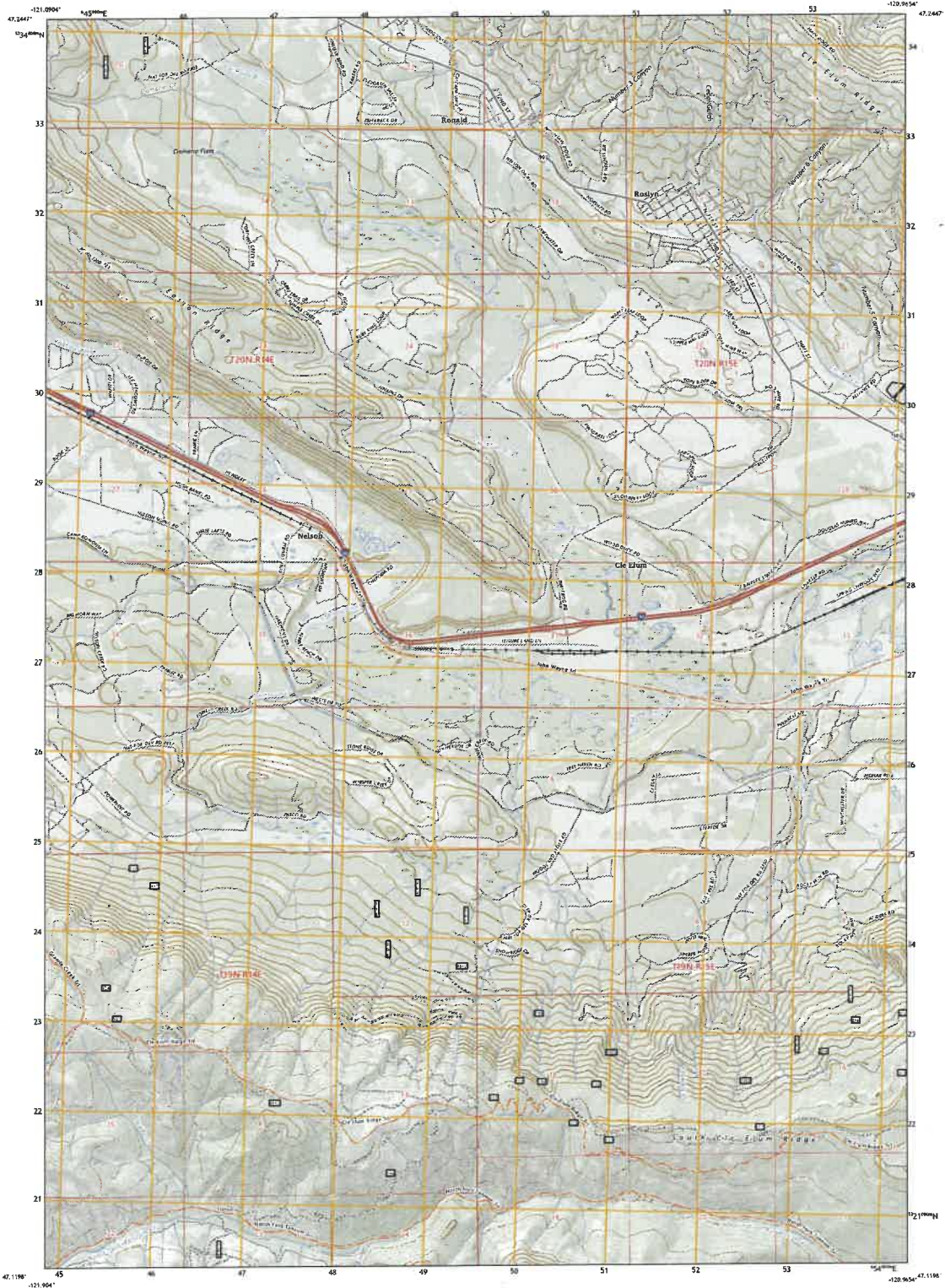




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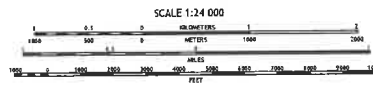
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Custom Extent  
7.5-MINUTE TOPO



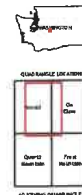
Produced by the United States Geological Survey  
North American Datum of 1983 (NAD83)

Vertical datum: National Vertical Datum of 1983 (NVD83). Projection and  
1:50,000 scale: Universal Transverse Mercator, Zone 18T.  
Data is provided by The National Map (1983), is the best available at the time of map  
generation, and includes data from the National Map of the United States, National  
Topographic, Geographical, and Statistical, Transverse, and State, and Local, and  
and other sources. Refer to the National Map of the United States (NAD83) for  
additional information.

This map is not a legal document. Boundaries may be questioned for this map to do  
without surveying points. Features shown may not have been surveyed or shown to be  
corrected and some data may be larger or smaller than actual surface conditions.  
Learn about The National Map: <https://nationalmap.gov>



CONTOUR INTERVAL: 10 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1983  
CONTOUR SHADING: 1000 FEET



ROAD CLASSIFICATION	
Expressway	Local Collector
Secondary Road	Local Road
Ramp	4000
Interstate Road	US Route
Primary Road	State Route
Secondary Road	FS Route
FS Route	FS Route

7.5-MINUTE TOPO, WA  
2013

## Appendix A-4. National Wetland Inventory Map





U.S. Fish and Wildlife Service

## National Wetlands Inventory

## National Wetland Inventory Map



July 21, 2023

### Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

## Appendix A-5. NRCS Soil Survey Map



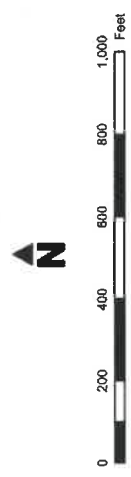


I-90 Bullfrog Weigh Station VWIM

PLAN SHEET



- MP Milepost Marker
- Parking Lane
- Wetland
- Wetland Buffer
- Proposed Weigh Station Area
- Proposed Structure



## **Appendix B. Wetland Delineation Data Sheets**

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Appendix B includes the following sample point data sheets:

W1-SP1

W1-SP2

W2-SP1

W2-SP2

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

Project/Site: Bullfrog Weigh Station Eastbound City/County: Kittitas County Sampling Date: 4/14/2023  
 Applicant/Owner: Washington State Department of Transportation State: WA Sampling Point: W1-SP1  
 Investigator(s): JZ Section, Township, Range: S31, T20N, R15E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): A Lat: 47.182215 Long: -121.021654 Datum: \_\_\_\_\_  
 Soil Map Unit Name: 238—Racker ashy sandy loam, 0 to 5 percent slopes NWI Classification: PSS

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? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is the Sampled Area within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Hydric Soil Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks: Wetland boundary defined on the north side by topographic break. South side boundary defined by extent of dogwood and hydric soils (dug multiple soil pits) and absence of Oregon grape and ponderosa pine. Access is difficult due to the abundance of rose. Hydrology was limited but hydric soils and FACW species (dogwood) throughout. Wetland delineated before the start of growing season.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)														
1. <u>Populus balsamifera</u>	<u>5</u>	<u>Y</u>	<u>100.0</u>	<u>FAC</u>															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
				<u>5</u> = Total Cover	<b>Prevalence Index worksheet:</b> <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>82</u> (A)</td> <td><u>218</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.659</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>82</u> (A)	<u>218</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>0</u>	x 1 = <u>0</u>																		
FACW species <u>30</u>	x 2 = <u>60</u>																		
FAC species <u>50</u>	x 3 = <u>150</u>																		
FACU species <u>2</u>	x 4 = <u>8</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>82</u> (A)	<u>218</u> (B)																		
<b>Sapling/Shrub Stratum (Plot size: 15ft x 15ft )</b>																			
1. <u>Cornus alba</u>	<u>30</u>	<u>Y</u>	<u>39.0</u>	<u>FACW</u>															
2. <u>Populus balsamifera</u>	<u>40</u>	<u>Y</u>	<u>51.9</u>	<u>FAC</u>															
3. <u>Mahonia nervosa</u>	<u>2</u>	<u>N</u>	<u>2.6</u>	<u>FACU</u>															
4. <u>Rosa nutkana</u>	<u>5</u>	<u>N</u>	<u>6.5</u>	<u>FAC</u>															
5. _____	_____	_____	_____	_____															
				<u>77</u> = Total Cover															
<b>Herb Stratum (Plot size: 5ft x 5ft )</b>																			
1. <u>None</u>	_____	_____	_____	<u>#N/A</u>															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
6. _____	_____	_____	_____	_____															
7. _____	_____	_____	_____	_____															
8. _____	_____	_____	_____	_____															
9. _____	_____	_____	_____	_____															
10. _____	_____	_____	_____	_____															
11. _____	_____	_____	_____	_____															
				_____ = Total Cover															
<b>Woody Vine Stratum (Plot size: 30ft x 30ft )</b>																			
1. <u>None</u>	_____	_____	_____	<u>#N/A</u>															
2. _____	_____	_____	_____	_____															
				_____ = Total Cover															
% Bare Ground in Herb Stratum _____																			
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																			
<b>Hydrophytic Vegetation Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No																			

Remarks:  
 Wetland delineated before the start of growing season so herbaceous vegetation may emerge in the summer.

# SOIL

Sampling Point: W1-SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features				Texture	Remarks		
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-3	10YR	4/1	100					Loam		
3-6	10YR	4/2	80	10YR	4/6	20	C	M	Loam	concentration is prominent
6-12	10YR	4/2	75	10YR	4/6	10	C	M	Loam	concentration is prominent
				10YR	3/2	15	D	PL&M	Loam	

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

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

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

<sup>3</sup>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:

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	Depth (inches): _____
Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	Depth (inches): _____
Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	Depth (inches): _____

(includes capillary fringe)

**Wetland Hydrology Present?** ☒ Yes ☐ No

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

Remarks:

Location is likely relict oxbow of Yakima River. Hydrology source from surface water runoff. Soil moist throughout. Closed depression, no outlet.



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

Project/Site: Bullfrog Weigh Station Eastbound City/County: Kittitas County Sampling Date: 4/14/2023  
 Applicant/Owner: Washington State Department of Transportation State: WA Sampling Point: W1-SP2  
 Investigator(s): JZ Section, Township, Range: S31, T20N, R15E  
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): A Lat: 47.182261 Long: -121.022976 Datum: \_\_\_\_\_  
 Soil Map Unit Name: 238—Racker ashy sandy loam, 0 to 5 percent slopes NWI Classification: upland

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? <input type="radio"/> Yes <input checked="" type="radio"/> No	Is the Sampled Area within a Wetland? <input type="radio"/> Yes <input checked="" type="radio"/> No
Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Remarks: Shared upland point for W1 and W2. Vegetation surveyed before the start of growing season.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Pinus ponderosa</u>	5	Y	100.0	FACU
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5 = Total Cover	5			

Sapling/Shrub Stratum (Plot size: 15ft x 15ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Pinus ponderosa</u>	10	Y	41.7	FACU
2. <u>Picea spp.</u>	10	Y	41.7	#N/A
3. <u>Populus balsamifera</u>	3	N	12.5	FAC
4. <u>Mahonia nervosa</u>	1	N	4.2	FACU
5. _____	_____	_____	_____	_____
24 = Total Cover	24			

Herb Stratum (Plot size: 5ft x 5ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Cirsium arvense</u>	2	Y	33.3	FAC
2. <u>Phalaris arundinacea</u>	2	Y	33.3	FACW
3. <u>Unknown grass spp. (dead)</u>	2	Y	33.3	#N/A
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
6 = Total Cover	6			

Woody Vine Stratum (Plot size: 30ft x 30ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>None</u>	_____	_____	_____	#N/A
2. _____	_____	_____	_____	_____
_____ = Total Cover	_____			

% Bare Ground in Herb Stratum 90

Remarks:

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>16</u>	x 4 = <u>64</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>23</u> (A)	<u>83</u> (B)

Prevalence Index = B/A = 3.609

**Hydrophytic Vegetation Indicators:**

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

Hydrophytic Vegetation Present? ☐ Yes ☒ No

# SOIL

Sampling Point: W1-SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	5/3	100				Loamy Sand	50% cobble	
6-12	10YR	4/2	100				Sand	80% cobble	
12-16								cobble	

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

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

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

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

# HYDROLOGY

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

<b>Field Observations:</b> Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No    Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Soil dry throughout.	

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

Project/Site: Bullfrog Weigh Station Eastbound City/County: Kittitas County Sampling Date: 4/14/2023  
 Applicant/Owner: Washington State Department of Transportation State: WA Sampling Point: W2-SP1  
 Investigator(s): JZ Section, Township, Range: S36, T20N, R14E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): A Lat: 47.182109 Long: -121.029125 Datum: \_\_\_\_\_  
 Soil Map Unit Name: 214—Haplosaprists, 0 to 2 percent slopes NWI Classification: PSS

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? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is the Sampled Area within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Hydric Soil Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks: Wetland boundary defined by topographic break around most of wetland perimeter. NW boundary defined by extent of reed canary grass. Wetland delineated before the start of growing season.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)														
1. <u>Populus balsamifera</u>	<u>5</u>	<u>Y</u>	<u>100.0</u>	<u>FAC</u>															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
<u>5</u> = Total Cover					<b>Prevalence Index worksheet:</b> <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>22</u></td> <td>x 3 = <u>66</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>112</u> (A)</td> <td><u>216</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.929</u>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>22</u>	x 3 = <u>66</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>112</u> (A)	<u>216</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>30</u>	x 1 = <u>30</u>																		
FACW species <u>60</u>	x 2 = <u>120</u>																		
FAC species <u>22</u>	x 3 = <u>66</u>																		
FACU species <u>0</u>	x 4 = <u>0</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>112</u> (A)	<u>216</u> (B)																		
<b>Sapling/Shrub Stratum (Plot size: 15ft x 15ft )</b>																			
1. <u>Cornus alba</u>	<u>50</u>	<u>Y</u>	<u>74.6</u>	<u>FACW</u>															
2. <u>Populus balsamifera</u>	<u>15</u>	<u>Y</u>	<u>22.4</u>	<u>FAC</u>															
3. <u>Rosa nutkana</u>	<u>2</u>	<u>N</u>	<u>3.0</u>	<u>FAC</u>															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
<u>67</u> = Total Cover																			
<b>Herb Stratum (Plot size: 5ft x 5ft )</b>																			
1. <u>Scirpus microcarpus</u>	<u>30</u>	<u>Y</u>	<u>75.0</u>	<u>OBL</u>															
2. <u>Phalaris arundinacea</u>	<u>10</u>	<u>Y</u>	<u>25.0</u>	<u>FACW</u>															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
6. _____	_____	_____	_____	_____															
7. _____	_____	_____	_____	_____															
8. _____	_____	_____	_____	_____															
9. _____	_____	_____	_____	_____															
10. _____	_____	_____	_____	_____															
11. _____	_____	_____	_____	_____															
<u>40</u> = Total Cover																			
<b>Woody Vine Stratum (Plot size: 30ft x 30ft )</b>																			
1. <u>None</u>	_____	_____	_____	<u>#N/A</u>															
2. _____	_____	_____	_____	_____															
_____ = Total Cover																			
% Bare Ground in Herb Stratum _____																			
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																			
<b>Hydrophytic Vegetation Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No																			

Remarks:  
Wetland delineated before the start of growing season so additional herbaceous vegetation may emerge in the summer.

## SOIL

Sampling Point: W2-SP1

<b>Profile Description:</b> (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
0-10	10YR	3/1	100						Muck	
10-16	10YR	5/1	95	10YR	4/3	5	C	M	Silt Loam	concentration is distinct

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

<sup>2</sup>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<sup>3</sup>:**

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

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

<b>Restrictive Layer (if present):</b>  Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> ● Yes      ○ No
--	---

Remarks:  
Hydric soil map unit at site: 214—Haplosaprists, 0 to 2 percent slopes

## HYDROLOGY

Wetland Hydrology Indicators:		
<b>Primary Indicators</b> (minimum of one required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
<b>Secondary Indicators</b> (2 or more required)		
	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
	<input type="checkbox"/> Drainage Patterns (B10)	
	<input type="checkbox"/> Dry-Season Water Table (C2)	
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
	<input type="checkbox"/> Geomorphic Position (D2)	
	<input type="checkbox"/> Shallow Aquitard (D3)	
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<b>Field Observations:</b>		
Surface Water Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Depth (inches): <u>5</u>
Water Table Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Depth (inches): <u>8</u>
Saturation Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Depth (inches): <u>0</u>
(includes capillary fringe)		
<b>Wetland Hydrology Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
Hydrology source from high groundwater, surface water runoff from adjacent roads, and culvert from I-90 median. Closed depression, no outlet.		

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

Project/Site: Bullfrog Weigh Station Eastbound City/County: Kittitas County Sampling Date: 4/14/2023  
 Applicant/Owner: Washington State Department of Transportation State: WA Sampling Point: W2-SP2  
 Investigator(s): JZ Section, Township, Range: S31, T20N, R15E  
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): A Lat: 47.182261 Long: -121.022976 Datum: \_\_\_\_\_  
 Soil Map Unit Name: 238—Racker ashy sandy loam, 0 to 5 percent slopes NWI Classification: upland

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? <input type="radio"/> Yes <input checked="" type="radio"/> No	Is the Sampled Area within a Wetland? <input type="radio"/> Yes <input checked="" type="radio"/> No
Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Remarks: Shared upland point for W1 and W2. Vegetation surveyed before the start of growing season.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Pinus ponderosa</u>	5	Y	100.0	FACU
2. _____				
3. _____				
4. _____				
5 = Total Cover	5			

Sapling/Shrub Stratum (Plot size: 15ft x 15ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Pinus ponderosa</u>	10	Y	41.7	FACU
2. <u>Picea spp.</u>	10	Y	41.7	#N/A
3. <u>Populus balsamifera</u>	3	N	12.5	FAC
4. <u>Mahonia nervosa</u>	1	N	4.2	FACU
5. _____				
24 = Total Cover	24			

Herb Stratum (Plot size: 5ft x 5ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Cirsium arvense</u>	2	Y	33.3	FAC
2. <u>Phalaris arundinacea</u>	2	Y	33.3	FACW
3. <u>Unknown grass spp. (dead)</u>	2	Y	33.3	#N/A
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
6 = Total Cover	6			

Woody Vine Stratum (Plot size: 30ft x 30ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>None</u>				#N/A
2. _____				
_____ = Total Cover				

% Bare Ground in Herb Stratum 90

### Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

### Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>16</u>	x 4 = <u>64</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>23</u> (A)	<u>83</u> (B)

Prevalence Index = B/A = 3.609

### Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

### Hydrophytic Vegetation Present?

☐ Yes ☒ No

Remarks:

# SOIL

Sampling Point: W2-SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	5/3	100				Loamy Sand	50% cobble	
6-12	10YR	4/2	100				Sand	80% cobble	
12-16								cobble	

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

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

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

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

# HYDROLOGY

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

## Appendix C. Wetland Rating Summaries and Figures

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Appendix C includes wetland rating forms and all required figures for each wetland.

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland 1 Date of site visit: 4/14/2023Rated by JZ Trained by Ecology? ☐ Yes ☐ No Date of training 2014HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI Basemap Imagery**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)

### 1. Category of wetland based on FUNCTIONS

- ☐ **Category I** - Total score = 22 - 27  
☐ **Category II** - Total score = 19 - 21  
☒ **Category III** - Total score = 16 - 18  
☐ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	L	
Landscape Potential	M	M	M	
Value	H	L	M	<b>Total</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>17</b>

**Score for each  
function based  
on three  
ratings**

(order of ratings  
is not  
important)

9 = H, H, H  
 8 = H, H, M  
 7 = H, H, L  
 7 = H, M, M  
 6 = H, M, L  
 6 = M, M, M  
 5 = H, L, L  
 5 = M, M, L  
 4 = M, L, L  
 3 = L, L, L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	<b>X</b>



## Maps and Figures required to answer questions correctly for Eastern Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	Figure 1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	Figure 2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	NA
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	Figure 1
Map of the contributing basin	D 5.3	Figure 4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	Figure 3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	Figure 5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	Figure 5

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

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 - 4 apply, and go to Question 5.

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

- ☐ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- ☐ At least 30% of the open water area is deeper than 10 ft (3 m)
- ☒ **NO - go to 2**
- ☐ **YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

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

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

- ☒ **NO - go to 3**
- ☐ **YES - The wetland class is Slope**

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

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

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- ☐ The overbank flooding occurs at least once every 10 years.

- ☒ **NO - go to 4**
- ☐ **YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

- ☐ **NO - go to 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 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland name or number: Wetland 1

**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 HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine ( the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

NOTES and FIELD OBSERVATIONS:

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
<b>D 1.0. Does the site have the potential to improve water quality?</b>		
<b>D 1.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland has no surface water outlet	points = 5	5
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 3	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
<b>D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</b>		
Yes = 3	No = 0	0
<b>D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)</b>		
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	5
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
<b>D 1.4. Characteristics of seasonal ponding or inundation:</b>		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	0
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
<b>Total for D 1</b>		<b>10</b>
<b>Add the points in the boxes above</b>		

**Rating of Site Potential** If score is: ☐ 12 - 16 = H ☐ 6 - 11 = M ☐ 0 - 5 = L

Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>D 2.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 No = 0	0
<b>D 2.2. Is <math>&gt; 10\%</math> of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1 No = 0	1
<b>D 2.3. Are there septic systems within 250 ft of the wetland?</b>	Yes = 1 No = 0	0
<b>D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?</b>		0
Source	Yes = 1 No = 0	
<b>Total for D 2</b>		<b>1</b>
<b>Add the points in the boxes above</b>		

**Rating of Landscape Potential** If score is: ☐ 3 or 4 = H ☐ 1 or 2 = M ☐ 0 = L

Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?</b>	Yes = 1 No = 0	0
<b>D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?</b>	Yes = 1 No = 0	1
<b>D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?</b>	Yes = 2 No = 0	2
<b>Total for D 3</b>		<b>3</b>
<b>Add the points in the boxes above</b>		

**Rating of Value** If score is: ☐ 2 - 4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion		
<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland has no surface water outlet	points = 8	8
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 4	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconstricted surface outlet	points = 0	
(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")		
<b>D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</b>		
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	0
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
<input type="checkbox"/> The wetland is a headwater wetland	points = 4	
<input type="checkbox"/> Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
<b>Total for D 4</b>	<b>Add the points in the boxes above</b>	<b>8</b>

**Rating of Site Potential** If score is: ☐ 12 - 16 = H ☐ 6 - 11 = M ☐ 0 - 5 = L

Record the rating on the first page

<b>D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?</b>		
<b>D 5.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 No = 0	0
<b>D 5.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generates runoff?</b>	Yes = 1 No = 0	1
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses ?</b>	Yes = 1 No = 0	0
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>1</b>


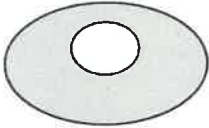

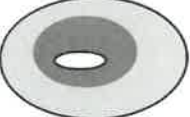


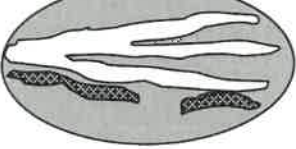
**Rating of Landscape Potential** If score is: ☐ 3 = H ☐ 1 or 2 = M ☐ 0 = L

Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The wetland is in a landscape that has flooding problems.</b>		
Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		0
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	points = 0	
Explain why: constrained by topography and road		
<input type="checkbox"/> There are no problems with flooding downstream of the wetland	points = 0	
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b>		
Yes = 2 No = 0		0
<b>Total for D 6</b>	<b>Add the points in the boxes above</b>	<b>0</b>

**Rating of Value** If score is: ☐ 2 - 4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Aquatic bed</li> <li><input type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</li> <li><input type="checkbox"/> Emergent plants <math>&gt; 12 - 40</math> in (<math>&gt; 30-100</math> cm) high are the highest layer with <math>&gt; 30\%</math> cover</li> <li><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt; 30\%</math> cover</li> <li><input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt; 30\%</math> cover)</li> <li><input type="checkbox"/> Forested (areas where trees have <math>&gt; 30\%</math> cover)</li> </ul> <div style="text-align: right;">             4 or more checks: points = 3              3 checks: points = 2              2 checks: points = 1              1 check: points = 0           </div>		0
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1      No = 0 0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes = 3 points &amp; go to H 1.4      No = go to H 1.3.2</li> </ul> H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes = 3      No = 0</li> </ul>		0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least $10 \text{ ft}^2$ . <i>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 saltcedar (Tamarisk)</i> # of species _____ <div style="text-align: right;">             Scoring: <math>&gt; 9</math> species: points = 2              4 - 9 species: points = 1  <math>&lt; 4</math> species: points = 0           </div>		1
H 1.4. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div> <p>All three diagrams in this row are HIGH = 3 points</p>		0



<b>H 1.6. Special habitat features:</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>			
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> 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 <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1		
<b>Total for H 1</b>		<b>Add the points in the boxes above</b>	<b>2</b>

**Rating of Site Potential** If Score is: ☐ 15 - 18 = H ☐ 7 - 14 = M ☒ 0 - 6 = L *Record the rating on the first page*

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate:</i> % undisturbed habitat 4% + [(% moderate and low intensity land uses)/2] 0% = 4%  <div style="display: flex; justify-content: space-between;"> <div>           &gt; 1/3 (33.3%) of 1 km Polygon            20 - 33% of 1 km Polygon            10 - 19% of 1 km Polygon            &lt; 10 % of 1 km Polygon         </div> <div>           points = 3            points = 2            points = 1            points = 0         </div> <div>0</div> </div>		
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate:</i> % undisturbed habitat 79% + [(% moderate and low intensity land uses)/2] 3% = 82%  <div style="display: flex; justify-content: space-between;"> <div>           Undisturbed habitat &gt; 50% of Polygon            Undisturbed habitat 10 - 50% and in 1 - 3 patches            Undisturbed habitat 10 - 50% and &gt; 3 patches            Undisturbed habitat &lt; 10% of 1 km Polygon         </div> <div>           points = 3            points = 2            points = 1            points = 0         </div> <div>3</div> </div>		
<b>H 2.3 Land use intensity in 1 km Polygon:</b> <div style="display: flex; justify-content: space-between;"> <div>           &gt; 50% of 1 km Polygon is high intensity land use            Does not meet criterion above         </div> <div>           points = (-2)            points = 0         </div> <div>0</div> </div>		
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b> <div style="display: flex; justify-content: space-between;"> <div>Yes = 3</div> <div>No = 0</div> <div>0</div> </div>		
<b>Total for H 2</b>		<b>Add the points in the boxes above</b>

**Rating of Landscape Potential** If Score is: ☐ 4 - 9 = H ☒ 1 - 3 = M ☐ < 1 = L *Record the rating on the first page*

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated.</b>  <div style="display: flex; justify-content: space-between;"> <div>           Site meets ANY of the following criteria:  <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input type="checkbox"/> It is mapped as a location for an individual WDFW species  <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan             Site has 1 or 2 priority habitats within 100 m (see Appendix B)            Site does not meet any of the criteria above         </div> <div>           points = 2                     points = 1            points = 0         </div> <div>1</div> </div>		

**Rating of Value** If Score is: ☐ 2 = H ☒ 1 = M ☐ 0 = L *Record the rating on the first page*

## 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 wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Vernal Pools</b> Is the wetland <b>less than 4000 ft<sup>2</sup></b> , and does it meet at least <b>two</b> of the following criteria? <ul style="list-style-type: none"> <li><input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li><input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li><input type="checkbox"/> The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li><input type="checkbox"/> Surface water is present for less than 120 days during the wet season.</li> </ul> <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - Go to <b>SC 1.1</b>      <input type="checkbox"/> No = <b>Not vernal pool</b> </div>	
<b>SC 1.1.</b> Is the vernal pool relatively undisturbed in February and March? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - Go to <b>SC 1.2</b>      <input type="checkbox"/> No = <b>Not a vernal pool with special characteristics</b> </div>	
<b>SC 1.2.</b> Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category II</b>      <input type="checkbox"/> No = <b>Category III</b> </div>	
<b>SC 2.0. Alkali wetlands</b> Does the wetland meet <b>one</b> of the following criteria? <ul style="list-style-type: none"> <li><input type="checkbox"/> The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li><input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li><input type="checkbox"/> 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.</li> </ul> OR does the wetland unit meet two of the following three sub-criteria? <ul style="list-style-type: none"> <li><input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland</li> <li><input type="checkbox"/> More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li><input type="checkbox"/> 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.</li> </ul> <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not an alkali wetland</b> </div>	
<b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b> <b>SC 3.1.</b> Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - Go to <b>SC 3.2</b>      <input type="checkbox"/> No - Go to <b>SC 3.3</b> </div> <b>SC 3.2.</b> Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div> <b>SC 3.3.</b> Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhpwetlands.pdf</a> <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - <b>Contact WNHP/WDNR and to SC 3.4</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div> <b>SC 3.4.</b> Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div>	



<b>SC 4.0. Bogs and Calcareous Fens</b> <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>	
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> <input type="checkbox"/> Yes - Go to <b>SC 4.3</b> <input type="checkbox"/> No - Go to <b>SC 4.2</b>
SC 4.2.	Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to <b>SC 4.3</b> <input type="checkbox"/> No = <b>Is not a bog for rating</b>
SC 4.3.	Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? <input type="checkbox"/> Yes = <b>Category I bog</b> <input type="checkbox"/> No - Go to <b>SC 4.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = <b>Category I bog</b> <input type="checkbox"/> No - Go to <b>SC 4.5</b>
SC 4.5.	Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? <input type="checkbox"/> Yes = <b>Is a Calcareous Fen for purpose of rating</b> <input type="checkbox"/> No - Go to <b>SC 4.6</b>
SC 4.6.	Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: <input type="checkbox"/> Marl deposits [calcium carbonate (CaCO <sub>3</sub> ) precipitate] occur on the soil surface or plant stems <input type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland <input type="checkbox"/> Yes = <b>Is a Category I calcareous fen</b> <input type="checkbox"/> No = <b>Is not a calcareous fen</b>
<b>SC 5.0. Forested Wetlands</b> <i>Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified that a forested class is present in question H)</i>	
<input type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream <input type="checkbox"/> Aspen ( <i>Populus tremuloides</i> ) represents at least 20% of the total cover of woody species <input type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) <input type="checkbox"/> Yes - Go to <b>SC 5.1</b> <input type="checkbox"/> No = <b>Not a forested wetland with special characteristics</b>	
SC 5.1.	Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No - Go to <b>SC 5.2</b>
SC 5.2.	Does the wetland have areas where aspen ( <i>Populus tremuloides</i> ) represents at least 20% of the total cover of woody species? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No - Go to <b>SC 5.3</b>
SC 5.3.	Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? <input type="checkbox"/> Yes = <b>Category II</b> <input type="checkbox"/> No - Go to <b>SC 5.4</b>
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream? <input type="checkbox"/> Yes = <b>Category II</b> <input type="checkbox"/> No = <b>Not a forested wetland with special characteristics</b>
<b>Category of wetland based on Special Characteristics</b> <i>Choose the highest rating if wetland falls into several categories</i> If you answered No for all types, enter "Not Applicable" on Summary Form	

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE** : This question is independent of the land use between the wetland unit and the priority habitat.

- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests**: Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak**: Woodland 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 – see web link above*).
- ☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **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 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), 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 > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **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).
- ☐ **Eastside Steppe**: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah**: All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

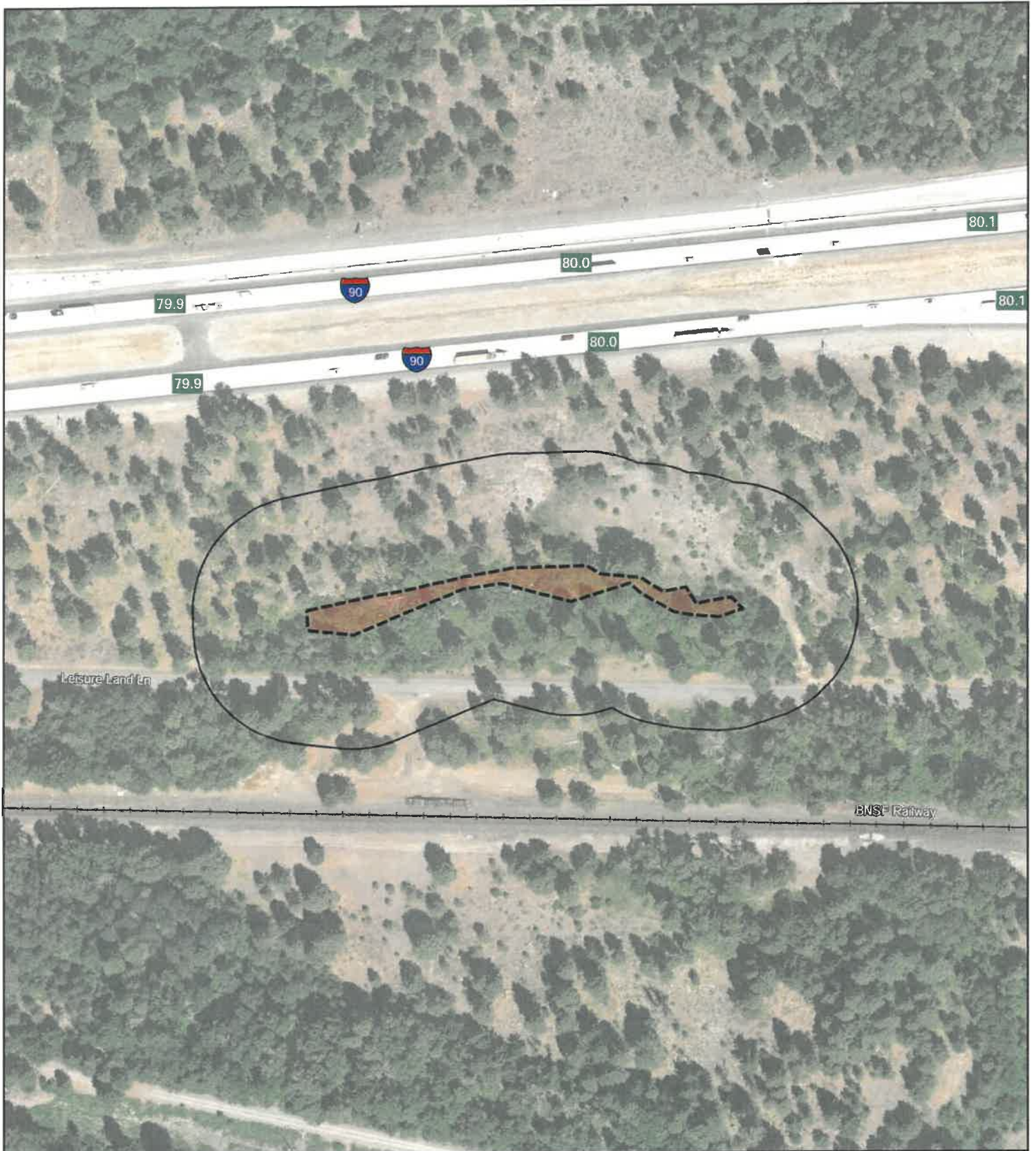


FIGURE 1

I-90 Bullfrog Weigh Station VWIM  
Wetland 1 - Cowardin Classes



- |   |   |
|---|---|
|  Milepost Marker |  Wetland Buffer (150 ft) |
|  Wetland         |  Scrub-Shrub             |

0 100 200 400 600 Feet





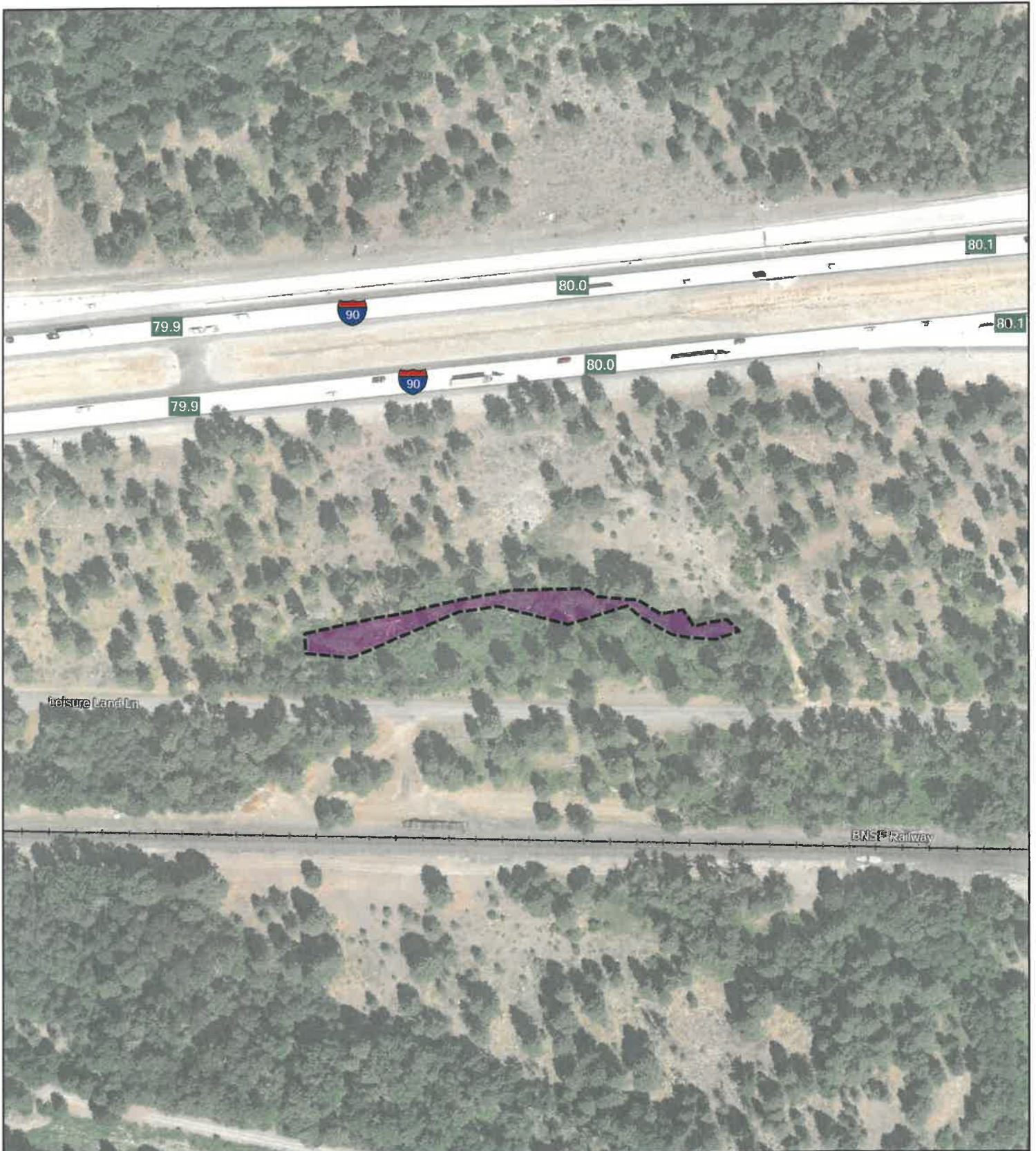
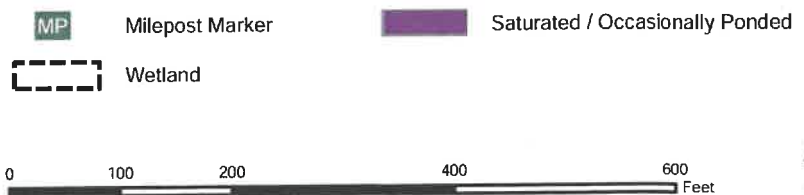
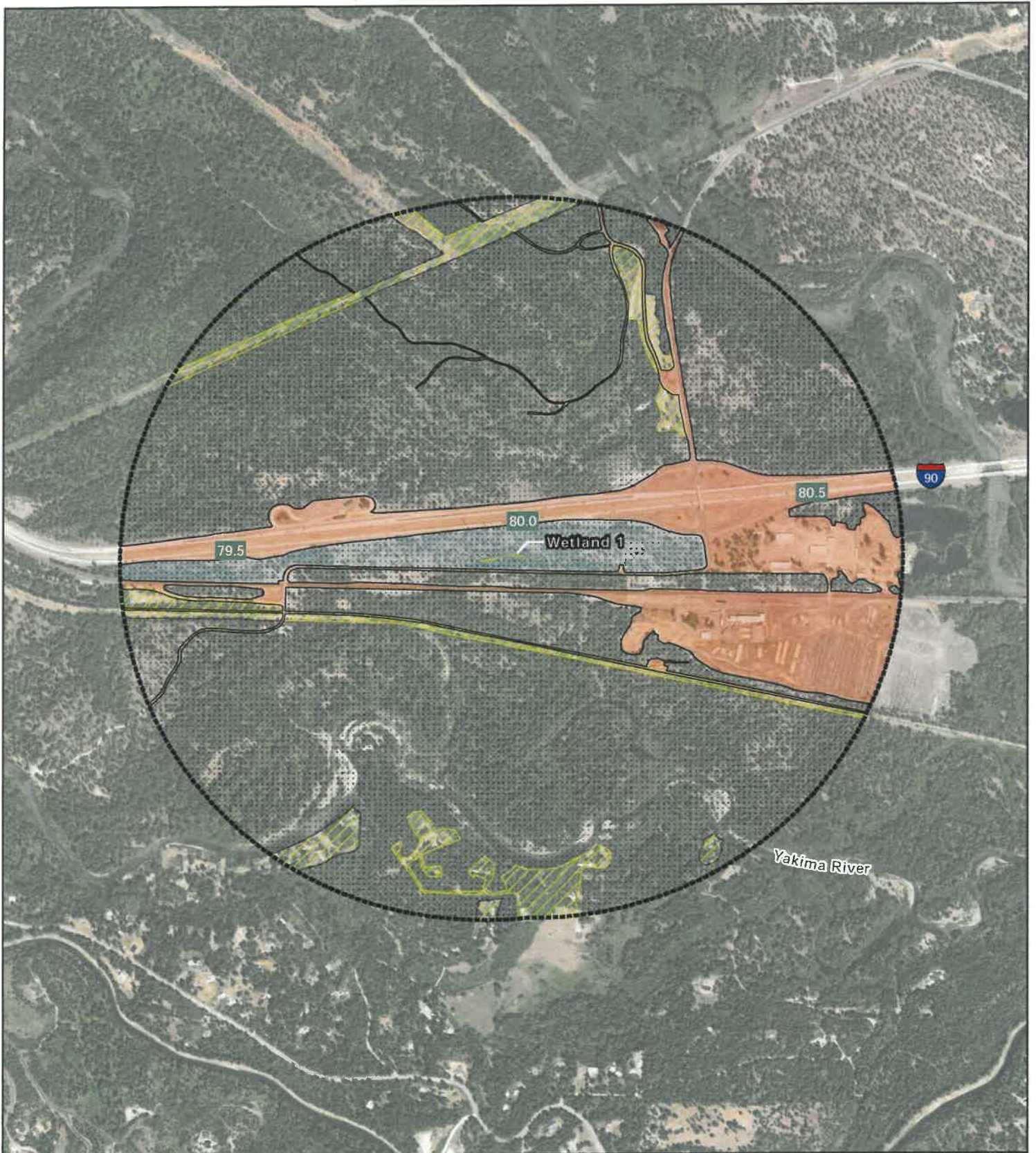


FIGURE 2

I-90 Bullfrog Weigh Station VWIM  
Wetland 1 - Hydroperiods







**FIGURE 3**

**I-90 Bullfrog Weigh Station VWIM**  
Wetland 1 - Habitat



- |                           |                        |
|---------------------------|------------------------|
| <b>MP</b> Milepost Marker | High Intensity         |
| Wetland 1                 | Low/Moderate Intensity |
| 1 km Polygon              | Undisturbed            |
|                           | Accessible Habitat     |



0 0.25 0.5 0.75 1 Miles



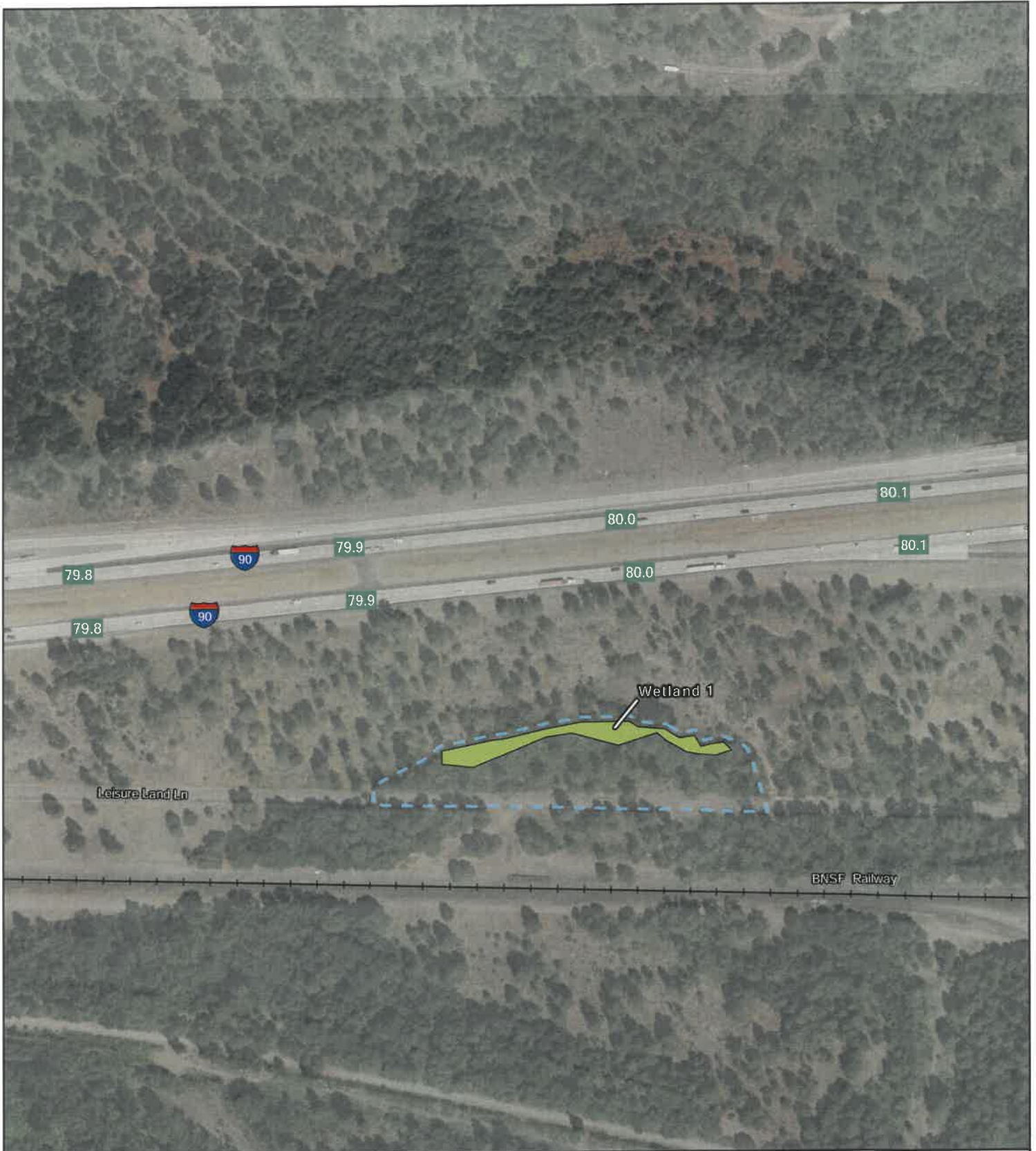


FIGURE 4

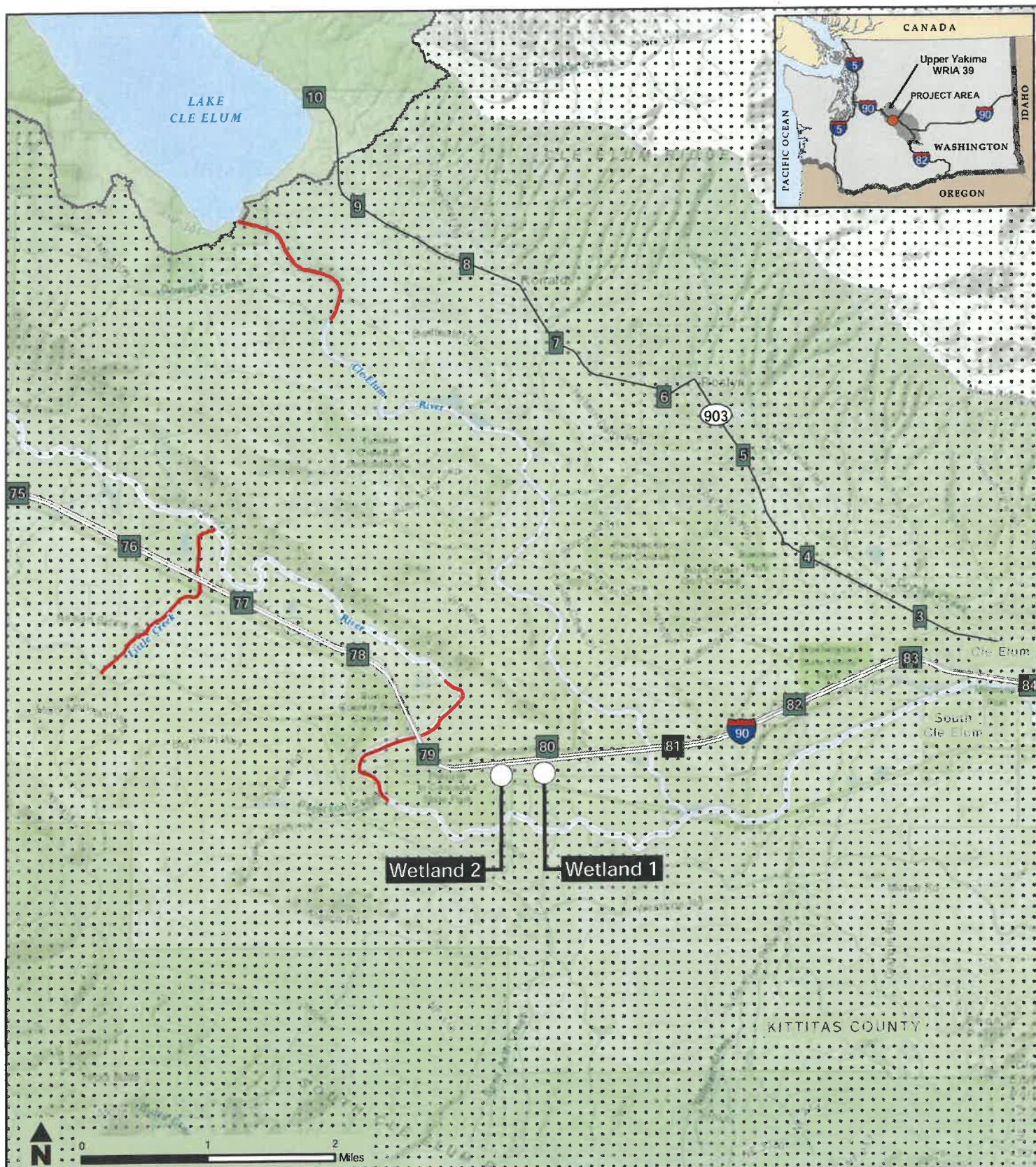
I-90 Bullfrog Weigh Station VWIM  
Wetland 1 - Contributing Basin

MP Milepost - 1/10th Mile  
Wetland  
Wetland\_Contributing\_Basins\_R00



0 500 1,000  
Feet





**FIGURE 5**

**I-90 Bullfrog Weigh Station VWIM**

Wetland 1 and Wetland 2

303(d) Waters, WRIAs, and TMDLs



**MP** Milepost Marker

WRIA: Upper Yakima

**Red Line** 303(d) Category 5 Impaired Waters

**Dashed Line** TMDL Approved Boundary

**Thick Dashed Line** Upper Yakima River Watershed DDT and TSS TMDL

**Thin Dashed Line** Upper Yakima River Tributaries Temperature TMDL

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland 2 Date of site visit: 4/14/2023Rated by JZ Trained by Ecology? ☒ Yes ☐ No Date of training 2014HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map ESRI Basemap ImageryOVERALL WETLAND CATEGORY II (based on functions ☒ or special characteristics ☐)

### 1. Category of wetland based on FUNCTIONS

- ☐ Category I - Total score = 22 - 27  
☒ Category II - Total score = 19 - 21  
☐ Category III - Total score = 16 - 18  
☐ Category IV - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	H	M	M	
Landscape Potential	M	H	M	
Value	H	L	M	<b>Total</b>
<b>Score Based on Ratings</b>	8	6	6	<b>20</b>

#### Score for each function based on three ratings

(order of ratings is not important)

9 = H, H, H  
 8 = H, H, M  
 7 = H, H, L  
 7 = H, M, M  
 6 = H, M, L  
 6 = M, M, M  
 5 = H, L, L  
 5 = M, M, L  
 4 = M, L, L  
 3 = L, L, L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	<b>X</b>

## Maps and Figures required to answer questions correctly for Eastern Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	Figure 1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	Figure 2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	NA
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	Figure 1
Map of the contributing basin	D 5.3	Figure 4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	Figure 3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	Figure 5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	Figure 5

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

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 - 4 apply, and go to Question 5.

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

- ☐ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- ☐ At least 30% of the open water area is deeper than 10 ft (3 m)
- ☐ NO - go to 2
- ☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

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

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
  - ☐ The overbank flooding occurs at least once every 10 years.
  - ☐ NO - go to 4
  - ☐ YES - The wetland class is **Riverine**
- NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

- ☐ NO - go to 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 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland name or number: Wetland 2

**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 HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine ( the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

NOTES and FIELD OBSERVATIONS:



<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)	
<b>Water Quality Functions</b> - Indicators that the site functions to improve water quality			
<b>D 1.0. Does the site have the potential to improve water quality?</b>			
<b>D 1.1. Characteristics of surface water outflows from the wetland:</b>			
Wetland has no surface water outlet	points = 5	5	
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 3		
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 3		
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1		
<b>D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</b>			
Yes = 3      No = 0		3	
<b>D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)</b>			
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3		
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1		
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0		
<b>D 1.4. Characteristics of seasonal ponding or inundation:</b>			
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>			
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	1	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1		
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0		
<b>Total for D 1</b>		<b>Add the points in the boxes above</b>	<b>14</b>

**Rating of Site Potential** If score is: ☐ 12 - 16 = H ☐ 6 - 11 = M ☐ 0 - 5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>			
<b>D 2.1. Does the wetland receive stormwater discharges?</b>	Yes = 1      No = 0	1	
<b>D 2.2. Is <math>&gt; 10\%</math> of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1      No = 0	1	
<b>D 2.3. Are there septic systems within 250 ft of the wetland?</b>	Yes = 1      No = 0	0	
<b>D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?</b>		0	
Source	Yes = 1      No = 0		
<b>Total for D 2</b>		<b>Add the points in the boxes above</b>	<b>2</b>

**Rating of Landscape Potential** If score is: ☐ 3 or 4 = H ☐ 1 or 2 = M ☐ 0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>			
<b>D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?</b>	Yes = 1      No = 0	0	
<b>D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?</b>	Yes = 1      No = 0	1	
<b>D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?</b>	Yes = 2      No = 0	2	
<b>Total for D 3</b>		<b>Add the points in the boxes above</b>	<b>3</b>

**Rating of Value** If score is: ☐ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page



<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion		
<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland has no surface water outlet	points = 8	8
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 4	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconstricted surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
<b>D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</b>		
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	2
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
<input type="checkbox"/> The wetland is a headwater wetland	points = 4	
<input type="checkbox"/> Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
<b>Total for D 4</b>	<b>Add the points in the boxes above</b>	<b>10</b>

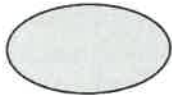
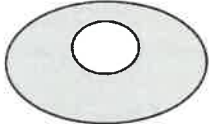

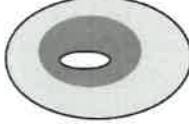


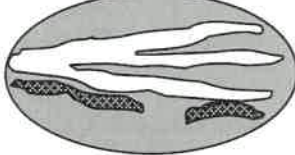
**Rating of Site Potential** If score is: ☐ 12 - 16 = H ☐ 6 - 11 = M ☐ 0 - 5 = L Record the rating on the first page

<b>D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?</b>		
<b>D 5.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 No = 0	1
<b>D 5.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generates runoff?</b>	Yes = 1 No = 0	1
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses ?</b>	Yes = 1 No = 0	1
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>3</b>

**Rating of Landscape Potential** If score is: ☐ 3 = H ☐ 1 or 2 = M ☐ 0 = L Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The wetland is in a landscape that has flooding problems.</b>		
Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		0
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	points = 0	
Explain why: constrained by topography and road		
<input type="checkbox"/> There are no problems with flooding downstream of the wetland	points = 0	
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b>		
	Yes = 2 No = 0	0
<b>Total for D 6</b>	<b>Add the points in the boxes above</b>	<b>0</b>

**Rating of Value** If score is: ☐ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0. Does the wetland have the potential to provide habitat for many species?</b>		
<b>H 1.1. Structure of plant community:</b> <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Aquatic bed</li> <li><input type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</li> <li><input type="checkbox"/> Emergent plants <math>&gt; 12 - 40</math> in (<math>&gt; 30-100</math> cm) high are the highest layer with <math>&gt; 30\%</math> cover</li> <li><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt; 30\%</math> cover</li> <li><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt; 30\%</math> cover)</li> <li><input type="checkbox"/> Forested (areas where trees have <math>&gt; 30\%</math> cover)</li> </ul>		4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0  1
<b>H 1.2. Is one of the vegetation types Aquatic Bed?</b>		Yes = 1    No = 0 0
<b>H 1.3. Surface water</b> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <input type="checkbox"/> Yes = 3 points & go to H 1.4    No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <input type="checkbox"/> Yes = 3    No = 0		0
<b>H 1.4. Richness of plant species</b> Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . <i>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 saltcedar (Tamarisk)</i> # of species _____ Scoring: $> 9$ species: points = 2 4 - 9 species: points = 1 $< 4$ species: points = 0		1
<b>H 1.4. Interspersion of habitats</b> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.		1
    <p>None = 0 points                      Low = 1 point                      Moderate = 2 points</p>    <p>All three diagrams in this row are HIGH = 3 points</p> <p>Riparian braided channels with 2 classes</p>		

<b>H 1.6. Special habitat features:</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> 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 <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	4	
<b>Total for H 1</b>	<b>Add the points in the boxes above</b>	<b>7</b>

**Rating of Site Potential** If Score is: ☐ 15 - 18 = H ☐ 7 - 14 = M ☐ 0 - 6 = L *Record the rating on the first page*

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate:</i> % undisturbed habitat 5% + [(% moderate and low intensity land uses)/2] 0% = 5%		
> 1/3 (33.3%) of 1 km Polygon 20 - 33% of 1 km Polygon 10 - 19% of 1 km Polygon < 10 % of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	0
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate:</i> % undisturbed habitat 86% + [(% moderate and low intensity land uses)/2] 3% = 89%		
Undisturbed habitat > 50% of Polygon Undisturbed habitat 10 - 50% and in 1 - 3 patches Undisturbed habitat 10 - 50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	3
<b>H 2.3 Land use intensity in 1 km Polygon:</b>		
> 50% of 1 km Polygon is high intensity land use Does not meet criterion above	points = (-2) points = 0	0
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b>		
Yes = 3                      No = 0		0
<b>Total for H 2</b>	<b>Add the points in the boxes above</b>	<b>3</b>

**Rating of Landscape Potential** If Score is: ☐ 4 - 9 = H ☐ 1 - 3 = M ☐ < 1 = L *Record the rating on the first page*

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated.</b>		
Site meets ANY of the following criteria: <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan	points = 2      points = 1 points = 0	1
Site has 1 or 2 priority habitats within 100 m (see Appendix B) Site does not meet any of the criteria above	points = 1 points = 0	

**Rating of Value** If Score is: ☐ 2 = H ☐ 1 = M ☐ 0 = L *Record the rating on the first page*

## 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 wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Vernal Pools</b> Is the wetland <b>less than 4000 ft<sup>2</sup></b> , and does it meet at least <b>two</b> of the following criteria? <ul style="list-style-type: none"> <li><input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li><input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li><input type="checkbox"/> The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li><input type="checkbox"/> Surface water is present for less than 120 days during the wet season.</li> </ul> <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - Go to <b>SC 1.1</b>      <input type="checkbox"/> No = <b>Not vernal pool</b> </div>	
<b>SC 1.1.</b> Is the vernal pool relatively undisturbed in February and March? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - Go to <b>SC 1.2</b>      <input type="checkbox"/> No = <b>Not a vernal pool with special characteristics</b> </div>	
<b>SC 1.2.</b> Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category II</b>      <input type="checkbox"/> No = <b>Category III</b> </div>	
<b>SC 2.0. Alkali wetlands</b> Does the wetland meet <b>one</b> of the following criteria? <ul style="list-style-type: none"> <li><input type="checkbox"/> The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li><input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li><input type="checkbox"/> 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.</li> </ul> OR does the wetland unit meet two of the following three sub-criteria? <ul style="list-style-type: none"> <li><input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland</li> <li><input type="checkbox"/> More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li><input type="checkbox"/> 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.</li> </ul> <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not an alkali wetland</b> </div>	
<b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b> <b>SC 3.1.</b> Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - Go to <b>SC 3.2</b>      <input type="checkbox"/> No - Go to <b>SC 3.3</b> </div> <b>SC 3.2.</b> Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div> <b>SC 3.3.</b> Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes - <b>Contact WNHP/WDNR and to SC 3.4</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div> <b>SC 3.4.</b> Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <div style="text-align: right; padding-right: 20px;"> <input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b> </div>	

<b>SC 4.0. Bogs and Calcareous Fens</b> <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>	
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> <input type="checkbox"/> Yes - Go to <b>SC 4.3</b> <input type="checkbox"/> No - Go to <b>SC 4.2</b>
SC 4.2.	Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to <b>SC 4.3</b> <input type="checkbox"/> No = <b>Is not a bog for rating</b>
SC 4.3.	Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? <input type="checkbox"/> Yes = <b>Category I bog</b> <input type="checkbox"/> No - Go to <b>SC 4.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = <b>Category I bog</b> <input type="checkbox"/> No - Go to <b>SC 4.5</b>
SC 4.5.	Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? <input type="checkbox"/> Yes = <b>Is a Calcareous Fen for purpose of rating</b> <input type="checkbox"/> No - Go to <b>SC 4.6</b>
SC 4.6.	Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: <input type="checkbox"/> Marl deposits [calcium carbonate (CaCO <sub>3</sub> ) precipitate] occur on the soil surface or plant stems <input type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland <input type="checkbox"/> Yes = <b>Is a Category I calcareous fen</b> <input type="checkbox"/> No = <b>Is not a calcareous fen</b>
<b>SC 5.0. Forested Wetlands</b> <i>Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified that a forested class is present in question H)</i>	
<input type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream <input type="checkbox"/> Aspen ( <i>Populus tremuloides</i> ) represents at least 20% of the total cover of woody species <input type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) <input type="checkbox"/> Yes - Go to <b>SC 5.1</b> <input type="checkbox"/> No = <b>Not a forested wetland with special characteristics</b>	
SC 5.1.	Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No - Go to <b>SC 5.2</b>
SC 5.2.	Does the wetland have areas where aspen ( <i>Populus tremuloides</i> ) represents at least 20% of the total cover of woody species? <input type="checkbox"/> Yes = <b>Category I</b> <input type="checkbox"/> No - Go to <b>SC 5.3</b>
SC 5.3.	Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? <input type="checkbox"/> Yes = <b>Category II</b> <input type="checkbox"/> No - Go to <b>SC 5.4</b>
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream? <input type="checkbox"/> Yes = <b>Category II</b> <input type="checkbox"/> No = <b>Not a forested wetland with special characteristics</b>
<b>Category of wetland based on Special Characteristics</b> <i>Choose the highest rating if wetland falls into several categories</i> If you answered No for all types, enter "Not Applicable" on Summary Form	



## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE** : This question is independent of the land use between the wetland unit and the priority habitat.

- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests**: Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak**: Woodland 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 – see web link above*).
- ☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **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 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), 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 > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **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).
- ☐ **Eastside Steppe**: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah**: All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



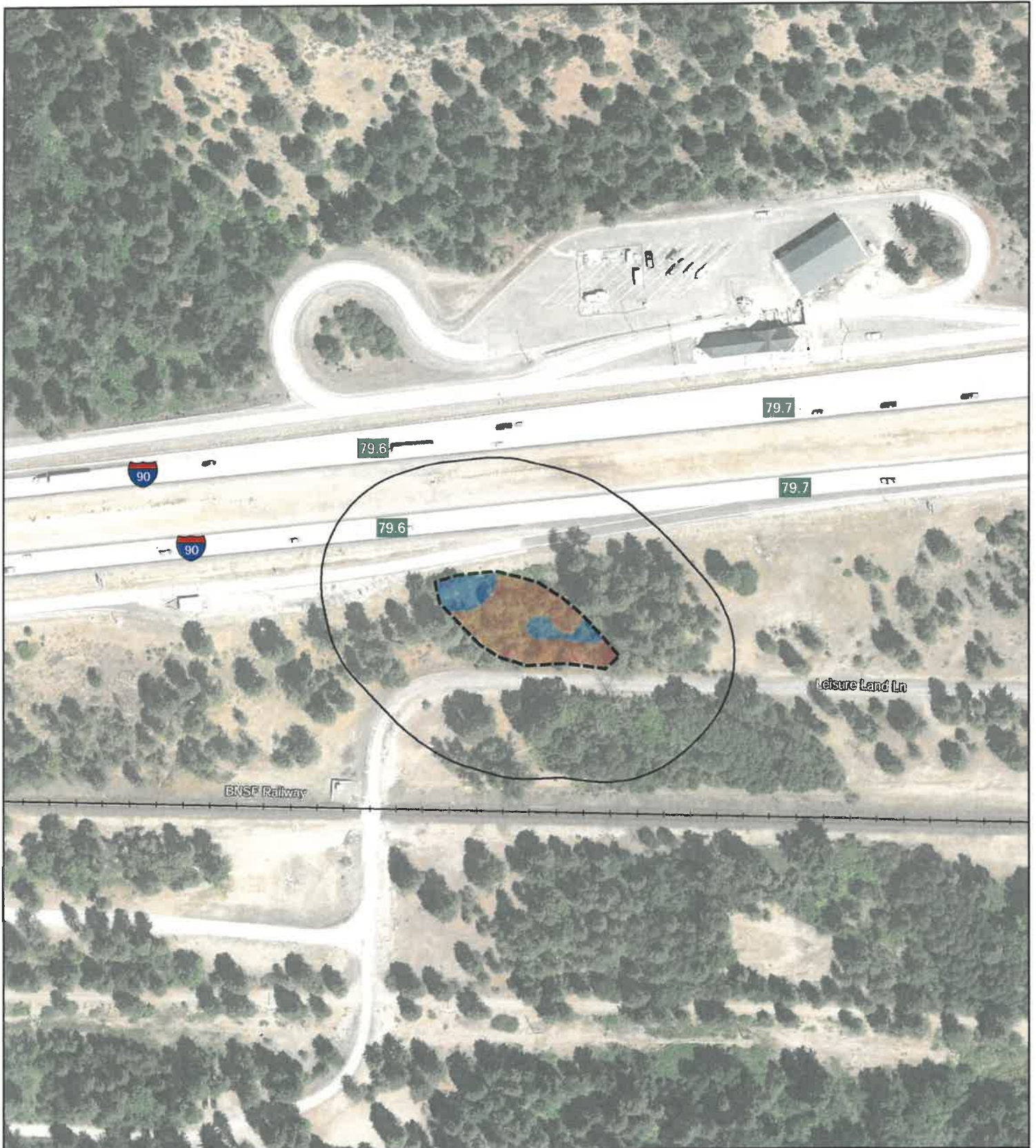


FIGURE 1

I-90 Bullfrog Weigh Station VWIM  
Wetland 2 - Cowardin Classes



- |           |                         |             |
|-----------|-------------------------|-------------|
| <b>MP</b> | Milepost Marker         | Emergent    |
|           | Wetland                 | Scrub-Shrub |
|           | Wetland Buffer (150 ft) |             |

0 100 200 400 600 Feet





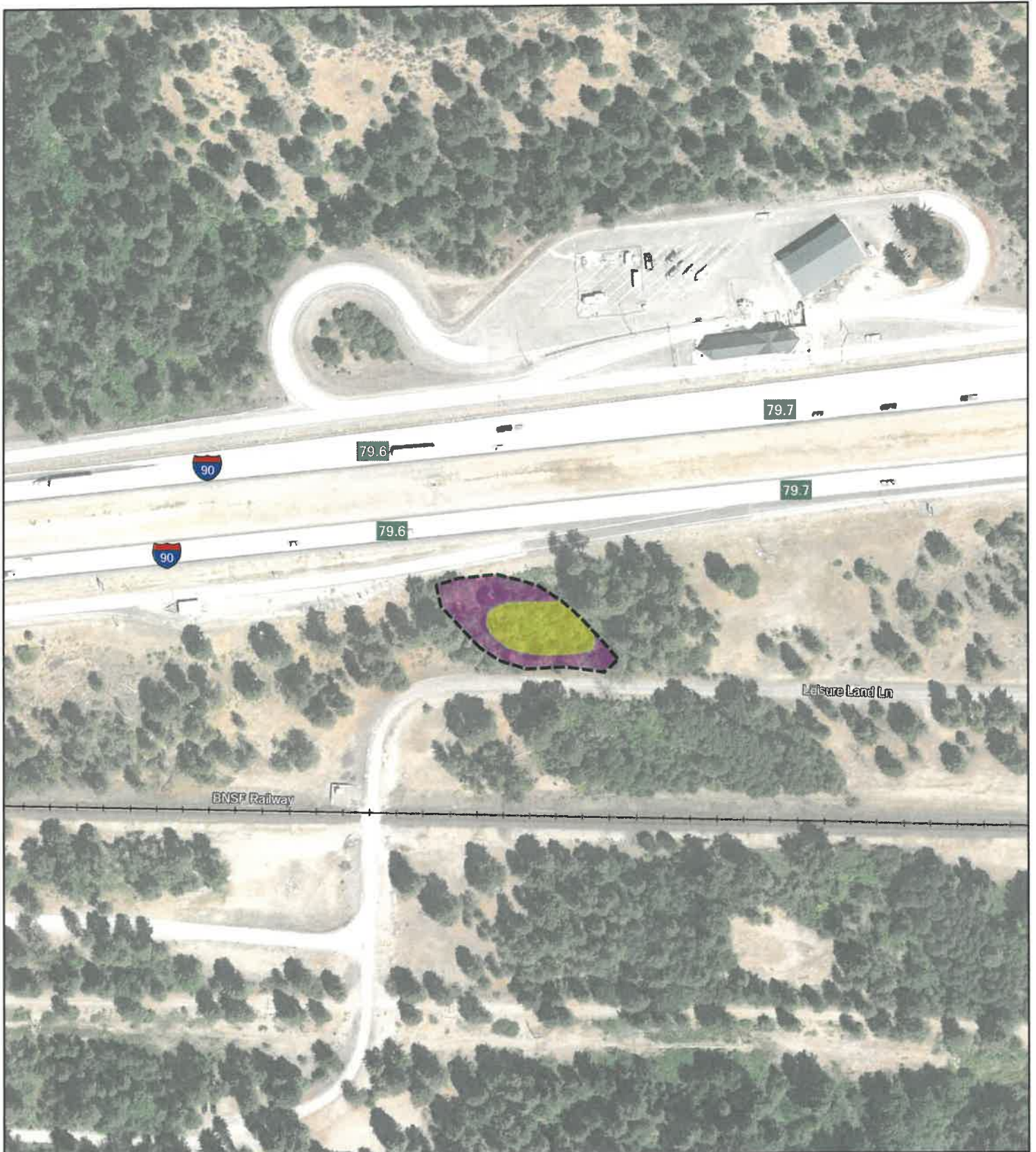


FIGURE 2

I-90 Bullfrog Weigh Station VWIM  
Wetland 2 - Hydroperiods



- |   |                 |   |                                 |
|---|-----------------|---|---------------------------------|
|  | Milepost Marker |  | Seasonally Pooled               |
|  | Wetland         |  | Saturated / Occasionally Pooled |

0 100 200 400 600 Feet







FIGURE 3

I-90 Bullfrog Weigh Station VWIM  
Wetland 2 - Habitat

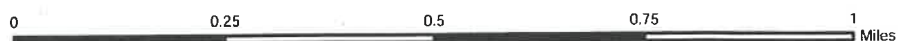
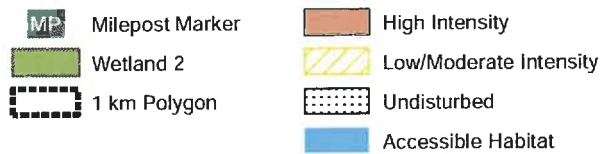




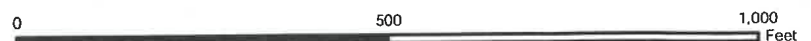


FIGURE 4

I-90 Bullfrog Weigh Station VWIM  
Wetland 2 - Contributing Basin



- MP Milepost - 1/10th Mile
- Wetland
- Wetland\_Contributing\_Basins\_R00





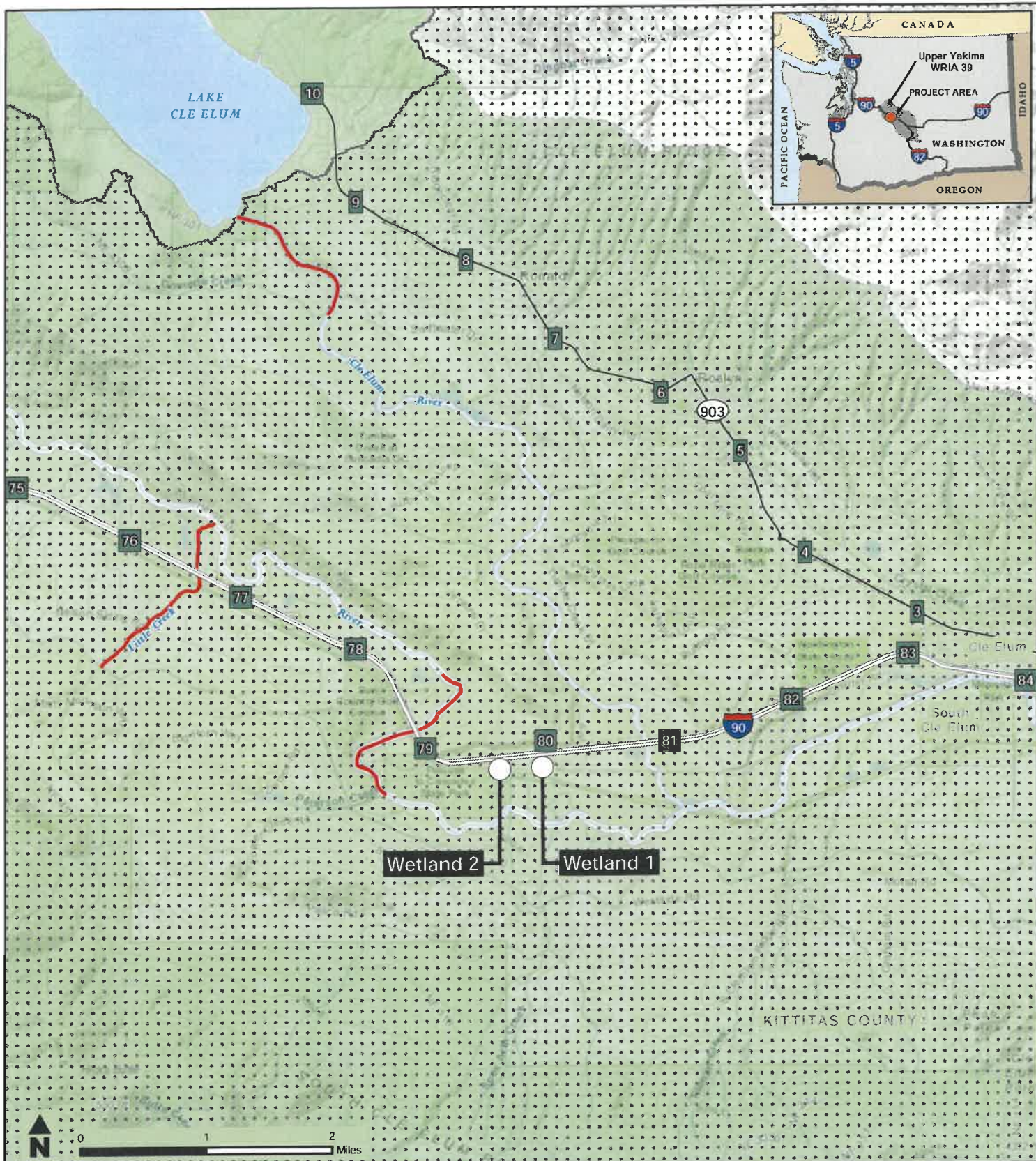


FIGURE 5

I-90 Bullfrog Weigh Station VWIM

Wetland 1 and Wetland 2

303(d) Waters, WRIAs, and TMDLs



MP Milepost Marker  
WRIA: Upper Yakima

303(d) Category 5 Impaired Waters  
TMDL Approved Boundary  
Upper Yakima River Watershed DDT and TSS TMDL  
Upper Yakima River Tributaries Temperature TMDL



## **Appendix D. Wetland Functional Assessment Summaries**

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# Summary of Functions and Values

Project: I-90 Eastbound Weigh Station

Wetland ID: 1

Cowardin Class: PSS

HGM: Depressional

Ecology Rating: III

Kittitas County Rating: III

Assessed by: J.Zylstra

Date: 4/14/23

Function/Value	Occurrence		Rationale (qualifiers & attributes)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 3, 5		Storage potential, but doesn't receive much runoff
Sediment removal		X	1		Distance to sediment source limits opportunity
Nutrient and toxic removal		X	1		Distance to nutrient or toxic source limits opportunity
Erosion control & shoreline stabilization		X	NA		Not affiliated with a watercourse
Production of organic matter and its export		X	2		Good production but no export due to lack of surface water outlet
General habitat suitability	X		1, 3, 7	X	Likely but not unique from surrounding habitat and proximity to I-90 limits function
Habitat for aquatic invertebrates		X	NA		Lacks inundation
Habitat for amphibians		X	NA		Lacks inundation
Habitat for wetland-associated mammals		X	NA		Lacks permanent surface water
Habitat for wetland-associated birds		X	NA		Lacks open water
General fish habitat		X	NA		Not associated with a fish-bearing stream
Native plant richness		X	None		Vegetation is native but not interspersed or diverse
Educational or scientific use		X	2		Easy access but limited educational value
Uniqueness & heritage		X	None		No heritage or uniqueness value

# Summary of Functions and Values

Project: I-90 Eastbound Weigh Station

Wetland ID: 2

Cowardin Class: PSS/PEM

HGM: Depressional

Ecology Rating: II

Kittitas County Rating: II

Assessed by: J.Zylstra

Date: 4/14/23

Function/Value	Occurrence		Rationale (qualifiers & attributes)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 3, 5		Good storage potential
Sediment removal	X		1, 5, 6	X	Likely, sediment input from I-90 traffic and traction sand, seasonal inundation
Nutrient and toxic removal	X		1, 2, 4, 5	X	Likely, from I-90 pollutant runoff
Erosion control & shoreline stabilization		X	NA		Not associated with a watercourse
Production of organic matter and its export		X	1, 2, 5		Good production but no export due to lack of surface water outlet
General habitat suitability	X		3, 5, 7	X	Limited by proximity to I-90
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonal standing water
Habitat for amphibians	X		1, 2, 4, 6		Seasonal standing water
Habitat for wetland-associated mammals		X	NA		Lacks permanent surface water
Habitat for wetland-associated birds		X	NA		Lacks open water
General fish habitat		X	NA		Not associated with a fish-bearing stream
Native plant richness		X	2		Relatively diverse vegetation but also reed canary grass present
Educational or scientific use		X	2		Easy access but limited educational value
Uniqueness & heritage		X	None		No heritage or uniqueness value

## Appendix E. Plan Sheets

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I-90 Bullfrog Weigh Station VWIM

# PLAN SHEET



Proposed Weigh Station Area  
Proposed Structure

Wetland  
Wetland Buffer

Milepost Marker  
Parking Lane

