

# **WETLAND AND STREAM ASSESSMENT REPORT**

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**SR 970/Teaway River Bank Stabilization Project**

**Kittitas County, Washington**

**Work Order: XL5902**

**Prepared By  
WSDOT South Central Region  
Environmental Office**

**August 26, 2020**



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## SR 970/Teaway River Bank Stabilization Project

August 26, 2020

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# Executive Summary

The Washington State Department of Transportation (WSDOT) is proposing to stabilize the right bank of the Teanaway River (project) where it is eroding the fill prism of State Route 970 (SR 970), at milepost (MP) 6.1, in Kittitas County, Washington. The project is located approximately six miles east of Cle Elum.

The study area incorporates the WSDOT right of way and adjacent private properties through which the river flows. Wetlands and streams were documented within the study area, summarized in the following tables:

WETLANDS					
ID	Classification and Rating			Area (ac)	Buffer (ft)
	Cowardin	HGM	Ecology Rating		
W1	PSS	Depressional	II	0.07	150
W2	PSS	Riverine	II	1.31	150
W3	PEM	Riverine	II	0.41	150
W4	PEM	Riverine	I	0.24	190

STREAMS						
Name	WRIA	Type		Fish Use	DCH	Buffer (ft)
		DNR	County			
Teanaway River	39	Type S	Shorelines Rural Conservancy	spring Chinook salmon, coho salmon, steelhead, bull trout, rainbow trout, westslope cutthroat trout, mountain whitefish	steelhead, bull trout	100

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# 1. Introduction

## 1.1. Project Location

The project is located in Kittitas County, Washington, where SR 970 crosses the Teanaway River, approximately six miles east of Cle Elum (Figure 1).

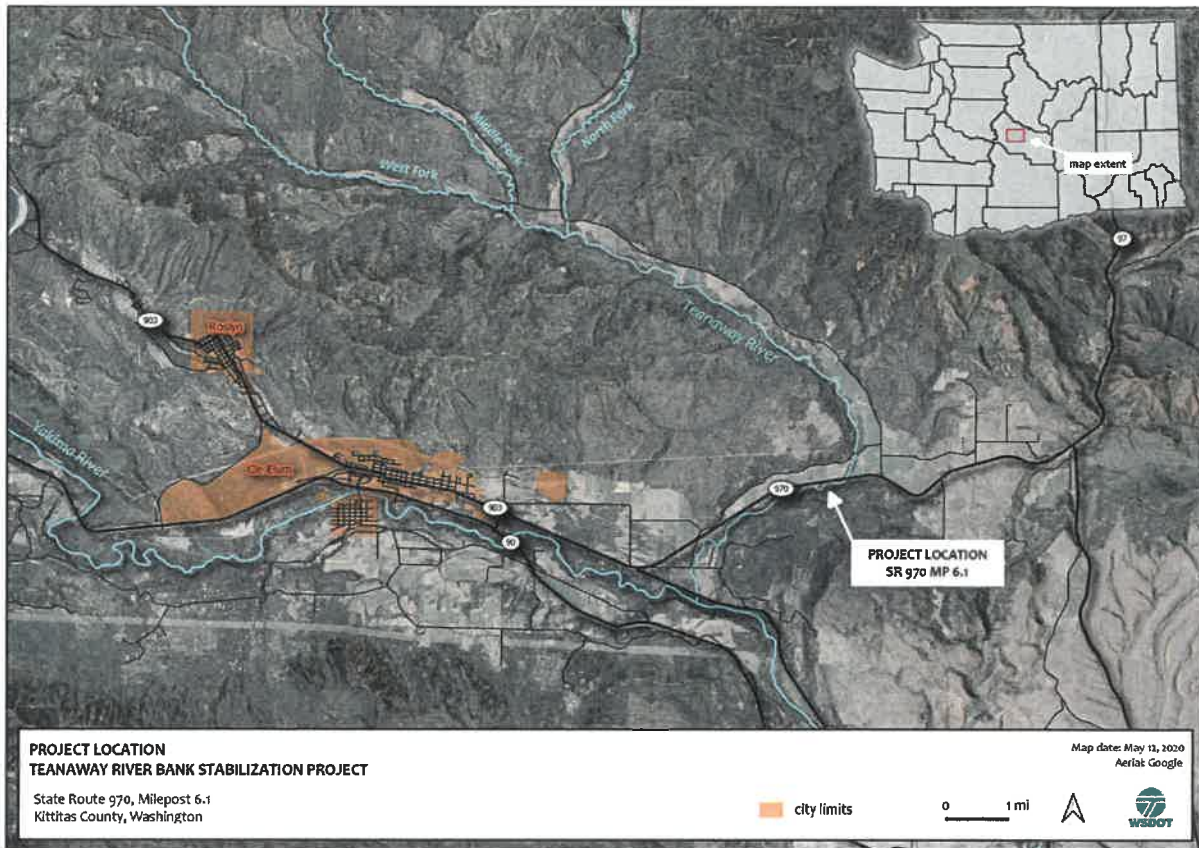


Figure 1. Project Location

Located on the east slope of the Cascade Mountain Range, the project falls within USDA Major Land Resource Area (MLRA) 2, USDA Land Resource Region (LRR) A. Occurring within the southwest quarter of Section 25 of Township 20N and Range 16E, the geospatial center of the project footprint is 47°11'40.20"N, 120°47'23.94"W.

## 1.2. Project Purpose and Description

The objective of the project is to stabilize the fill prism of SR 970. The proposed design solution involves construction of a 600-foot long crib-wall revetment, integrated into the roadway prism, with incorporated large wood and riparian plantings. In order to isolate the in-water work zone, the river will be diverted into an existing seasonal side channel, allowing for fish to be moved away from the work zone and for water quality Best Management Practices (BMPs) to be

- County, Station Cle Elum, Washington (NRCS 2020a) (**Appendix A-1**).
- U.S. Geological Survey (USGS) 7.5 minute topographic maps (USGS 2020) (**Appendix A-2**).
- Natural Resources Conservation Service (NRCS) soil survey data (NRCS 2020b) (**Appendix A-3**).
- National Wetlands Inventory (NWI) maps (**USFWS 2020c**)

## **2.1. Wetland Delineation, Classification, Functions, and Buffers**

Wetlands were delineated using routine methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (Corps 2010). Wetland boundaries were delineated based on the observed presence of vegetation, soils, and hydrology indicators while referencing background information specific to each location.

Wetlands were described according to the U.S. Fish and Wildlife Service (USFWS) *Cowardin classification system* (Cowardin et al. 1979) and *Hydrogeomorphic Classification System* (HGM) (Brinson 1993) and rated per the *Washington State Wetland Rating System for Eastern Washington – 2014 Update* (Hruby 2014). Wetland functions were assessed in reference to *Wetland Functions Characterization Tool for Linear Projects* (BPJ tool) (Null et al. 2000). Plants were named according to Corps (2018).

Wetland buffers were evaluated according to: (1) land use in the vicinity (e.g., agricultural, residential, commercial, industrial), (2) vegetation structure (tree, shrub, herb, vine, un-vegetated), and (3) vegetation community (dominant plant species per strata, native vs. non-native dominants, and presence of noxious weeds).

Wetland buffer radii were applied per Title 17B (Shorelines) of the Kittitas County Code (Kittitas County 2020).

## **2.2. Stream Delineation, Classification, and Buffers**

The ordinary high water mark (OHWM) of the river was delineated per guidance provided by the U.S. Army Corps of Engineers (USACE) (Corps 2005).

Fish presence was determined based on information made available by Washington State Department of Fish and Wildlife (WDFW) (WDFW 2020a, WDFW 2020b).

Kittitas County stream buffers were applied per Table 17B.05.020K-1 of the Kittitas County Code (Kittitas County 2020). Where wetland and stream buffers overlap, the area of overlap is addressed as wetland buffer.

## **2.3. Wetland and Stream Boundary Geospatial Documentation**

Wetland and stream boundaries were geospatially surveyed with a Motorola G7 Power mobile phone, running the mapitGIS application, paired via Bluetooth® with a Juniper Systems Geode™ Multi-Global Navigation Satellite System (Multi-GNSS) receiver capable of sub-meter horizontal accuracy.

### 3.3. Wetland Overview

An overview of wetlands identified within the survey area is presented in Table 1 and Figure 3.

Table 1. Wetlands Observed

Wetland	Wetland Classification			Area (ac)	Buffer (ft) <sup>d</sup>
	Cowardin <sup>a</sup>	HGM <sup>b</sup>	Ecology Rating <sup>c</sup>		
W1	PSS	Depressional	II	0.07	150
W2	PSS	Riverine	II	1.31	150
W3	PEM	Riverine	II	0.41	150
W4	PEM	Riverine	I	0.24	190

<sup>a</sup> PEM = Palustrine Emergent, PSS = Palustrine Scrub-Shrub

<sup>b</sup> Hydrogeomorphic Wetland Classification

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

<sup>d</sup> Kittitas County Code Section 17B.05.020G

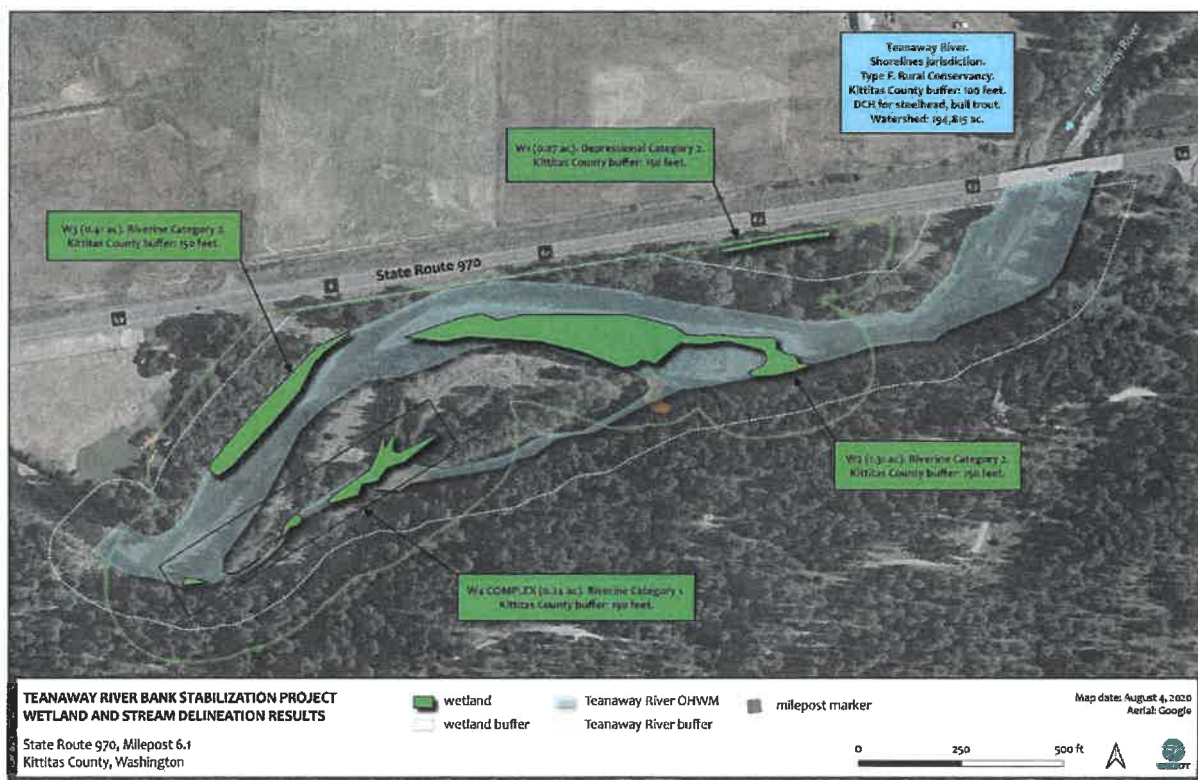


Figure 3. Wetland and stream delineation results

### 3.3.4. Wetland Functions

The functions provided by wetlands W1 – W4 are summarized in Table 4.

Table 4. Wetland functions characterization<sup>1</sup>

Functions and Values	W1	W2	W3	W4
<b>Water Quality Functions</b>				
Sediment Removal	-	-	-	x
Nutrient and Toxicant Removal	-	-	-	x
<b>Hydrologic Functions</b>				
Flood Flow Alteration	X*	X*	X*	X*
Erosion Control & Shoreline Stabilization	-	X*	X*	x
<b>Habitat Functions</b>				
Production & Export of Organic Matter	-	x	x	x
General Habitat Suitability	-	x	x	x
Habitat for Aquatic Invertebrates	-	x	x	x
Habitat for Amphibians	-	-	-	x
Habitat for Wetland-Associated Mammals	-	-	-	X*
Habitat for Wetland-Associated Birds	-	-	-	-
General Fish Habitat	-	X*	X*	X*
Native Plant Richness	-	-	-	X*
<b>Special Characteristics</b>				
Educational or Scientific Value	-	-	-	-
Uniqueness and Heritage	-	-	-	-

X\* indicates a principal function of the wetland  
 x indicates the function is present  
 - indicates that the function is insignificant, or not present

<sup>1</sup> Adapted per Null et al. (2000).



### 3.3.6. Wetland Summaries

Summaries for wetlands W1 – W4 are presented in **Tables 6-9**.

Table 6. Wetland W1 Summary


<b>WETLAND W1 – INFORMATION SUMMARY</b>		
<b>Location:</b>	T20N-R16E- S25. Kittitas County.	
	<b>Local Jurisdiction</b>	Kittitas County
	<b>Ecology Rating</b>	II
	<b>Buffer Width</b>	150 feet
	<b>Wetland Size in study area</b>	0.07 ac
	<b>Cowardin Class</b>	PSS
	<b>HGM Class</b>	Depressional
	<b>Wetland Data Sheet(s)</b>	Appendix B; Sampling Point W1-SP1
	<b>Upland Data Sheet(s)</b>	Appendix B; Sampling Point W1-SP2
<b>Dominant Vegetation</b>	Trees - none Shrubs - red-osier dogwood ( <i>Cornus alba</i> ) Herbaceous - none	
<b>Soils</b>	Loamy sand to sand with redox concentrations/depletions supporting hydric soil indicator S5 (Sandy Redox)	
<b>Hydrology</b>	high groundwater table.	
<b>Rationale for Delineation</b>	All three required wetland indicators are present.	
<b>Wetland Functions Summary</b>		
<b>Water Quality</b>	Moderate to high value in processing elevated nutrients and toxicants due to runoff from adjacent SR 970.	
<b>Hydrologic</b>	Moderate to high hydrologic value due to presence upon the floodplain.	
<b>Habitat</b>	Moderate to high habitat value due to proximity to undisturbed habitat within 1 km.	
<b>Buffer Condition</b>	A roadside ditch at the toe of the SR 970 fill prism, W1 is bordered by the SR 970 fill prism to the north and a stand of mature riparian vegetation to the south. The vicinity is disturbed by vehicular traffic. The wetland lacks connectivity with the river or other wetlands, but is contiguous with riparian habitat. Overall buffer condition: moderate to poor.	

Table 8. Wetland W3 Summary



<b>WETLAND W3 – INFORMATION SUMMARY</b>		
<b>Location:</b>	T20N-R16E- S25. Kittitas County.	
	<b>Local Jurisdiction</b>	Kittitas County
	<b>Ecology Rating</b>	II
	<b>Buffer Width</b>	150 feet
	<b>Wetland Size in study area</b>	0.41 ac
	<b>Cowardin Class</b>	PEM
	<b>HGM Class</b>	Riverine
	<b>Wetland Data Sheet(s)</b>	Appendix B; Sampling Point W3-SP1
	<b>Upland Data Sheet(s)</b>	Appendix B; Sampling Point W3-SP2
<b>Dominant Vegetation</b>	Trees - none Shrubs - none Herbaceous - cottonwood ( <i>Populus balsamifera</i> )	
<b>Soils</b>	Large cobble. Inferred to be hydric under "problematic soils" due to the presence of hydrophytic vegetation and hydrology indicators.	
<b>Hydrology</b>	Seasonal inundation and high groundwater table.	
<b>Rationale for Delineation</b>	Vegetation and hydrology indicators are present, soil indicator inferred as hydric (Problematic).	
<b>Wetland Functions Summary</b>		
<b>Water Quality</b>	Moderate to low value in processing elevated nutrients and toxicants because the river is already clean.	
<b>Hydrologic</b>	Moderate to high hydrologic value due to presence below the OHWM and flashy nature of the river.	
<b>Habitat</b>	Moderate to high habitat value due to proximity to undisturbed habitat within 1 km and status of the river as critical habitat for ESA-listed fish.	
<b>Buffer Condition</b>	W3 is located on a right-bank cobble bar. It is bordered by the main channel to the south and a stand of riparian upland forest to the north. The wetland serves as fish habitat at higher flows and has connectivity with high-quality habitat (streams, other wetlands, forest stands). However, a rural residence lies within 150 feet of the wetland. Overall buffer condition: moderate to good.	

Table 10. Stream Summary – Teanaway River.

<b>STREAM INFORMATION SUMMARY – TEANAWAY RIVER</b>		
	<b>WRIA #</b>	39
	<b>Local Jurisdiction</b>	Kittitas County
	<b>Shoreline Designation</b>	Rural Conservancy
	<b>DNR Water Type<sup>2</sup></b>	Type S
	<b>Buffer Width</b>	100
	<b>Documented Fish Use</b>	spring Chinook, coho, steelhead, rainbow trout, westslope cutthroat trout, Eastern brook trout, mountain whitefish, Pacific lamprey, and mountain sucker
<b>Critical Habitat</b>	The river is designated as critical habitat for steelhead and bull trout.	
<b>Connectivity</b>	The Teanaway is a left-bank tributary to the Yakima River at river mile (RM) 176.1.	
<b>Riparian/Buffer Condition</b>	Riparian vegetation is relatively sparse along the right bank, but fairly extensive along the left bank, including multi-story successional generations of cottonwood, alder, and willow.	

<sup>2</sup> DNR 2020a

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# Appendix A. Background Information

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This Appendix includes the following sub-appendices:

- A-1 Precipitation Data Analysis
- A-2 USGS Topographic Maps
- A-3 NRCS Soil Survey Maps and Soil Codes
- A-4 Kittitas County Critical Areas Information

## Appendix A-1. Precipitation Data Analysis

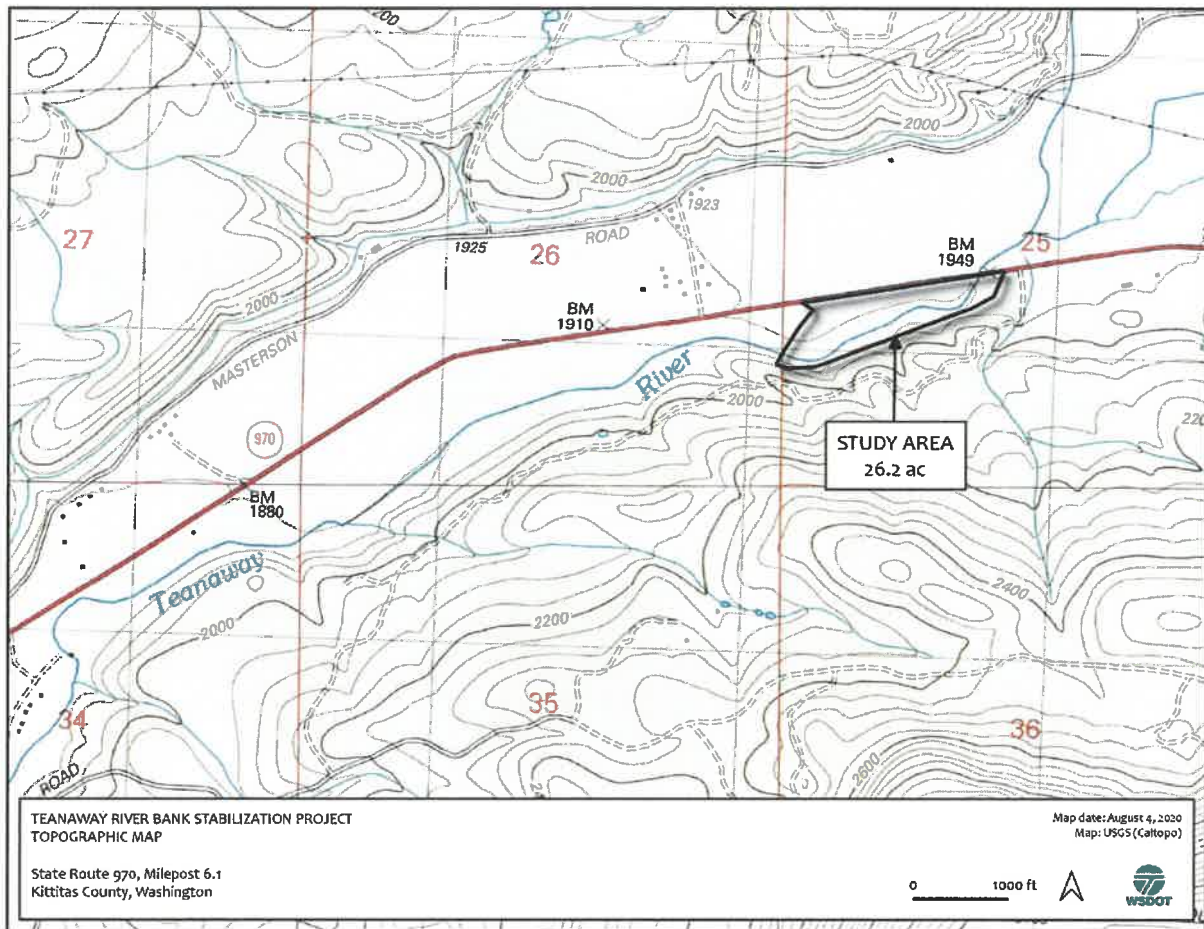
		Long-term rainfall records <sup>a</sup>							
	Month	3 yrs. in 10 less than	Average	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal <sup>b</sup>	Condition Value	Month weight value	Product of previous two columns
1 <sup>st</sup> prior month	June	0.57	0.97	1.17	0	D	1	3	3
2 <sup>nd</sup> prior month	May	0.57	0.93	1.12	0.87	N	2	2	4
3 <sup>rd</sup> prior month	April	0.78	1.14	1.36	0.31	D	1	1	1
<sup>a</sup> Station: Cle Elum (NRCS 2020a) <sup>b</sup> Monthly rainfall is considered normal (N) if it falls between the low and high range. Otherwise, it is wetter than normal (W) or drier than normal (D).								<b>Sum <sup>c</sup></b>	<b>8</b>
		<sup>c</sup> 6-9	prior period was drier than normal						
		10-14	prior period was normal						
		15-18	prior period was wetter than normal						

**Conclusion:** drier than normal precipitation conditions were present during the three collective months prior to the July 15, 2020 fieldwork.

Daily precipitation prior to the July 15, 2020 field visit (NRCS 2020a)	
Date (2020)	Daily Precipitation (inches) <sup>a</sup>
July 5-14	0
July 15 (fieldwork)	0
<b>Sum</b>	<b>0</b>

**Conclusion:** no precipitation was recorded in the ten days preceding fieldwork.

## Appendix A-2. USGS Topographic Map





## Appendix A-4. Kittitas County Critical Areas Information

Parcel Information	
Address:	10090 SR 970 CLE ELUM
Tax Parcel ID:	<a href="#">234935</a>
Map Number:	20-16-25000-0022
Recorded Area:	10.16 a
Owner Name:	BASELER, RANDOLPH S & LINDA D
Name Cont:	PRENGUBER, THOMAS R & DIANA B
Mailing Address:	12546 206TH PL SE
City/State/Zip:	ISSAQUAH WA 98027-8543

Critical Areas Information	
Contains > 30% Slope:	No
PHS Site Name:	TEANAWAY RIVER RIPARIAN AREA
Roof Hazard:	LOW_HAZARD RATING, HIGH_EXTREEME HAZARD RATING
Roof Class:	CLASS C, CLASS A
Seismic Category:	D1
Shore Line:	Rural Conservancy, Aquatic
Wetland Code:	R3USC, PSSC
DNR Water Type:	Type 1
FIRM Zone:	ZONE C, 100 YEAR, FLOODWAY
FEMA Flood Map:	5300950266B
Coalmine Shaft:	N/A
Airport Zone:	N/A
BPA Right of Way:	-1
Max Elevation:	1926
ISO:	0.037
PG:	71, <a href='http://www.co.kittitas.wa.us/boc/co untycode/title14.aspx#14.04.020' target='_blank'>Engineering is required</a>

Domestic Water Information	
Groundwater Permit Required?	N/A, <a href="#">Suitability Map</a>
Qualifying Water Banks:	Bourne, New Suncadia(TeanawayRiver)
Sub Basin Watershed:	Teanaway River

Administrative Information	
Zone and Allowed Uses:	<a href="#">Forest and Range</a>
Land Use Category:	Rural Working
Commissioner District:	
Voter Precinct:	Teanaway
Hospital District:	HOSPITAL DISTRICT 1
School District:	Cle Elum-Roslyn School District
Irrigation District:	N/A
Weed District:	
Fire District:	Fire District 7 (Cle Elum)
Cemetery District:	N/A
Court District:	Upper District Court
PUD Comm District:	District 2
Parks and Rec District:	
Widland Urban Interface:	<a href="#">IR 1</a>
Stock Restricted Area:	Open Range
COE Gas Service Area:	No

# Appendix B. Wetland Delineation Data Sheets

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

Project/Site: SR 970 Teanaway River - WETLAND 1 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP1  
 Investigator(s): Geoffrey Gray Section, Township, Range: T20N-R16E-S25  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): A Lat: 47°11'34.05"N Long: 120°47'36.41"W Datum: WGS84  
 Soil Map Unit Name: Xerofluvents, 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 Hydric Soil Present? <input checked="" type="radio"/> Yes <input type="radio"/> No Wetland Hydrology 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
Remarks: Wetland 1 (W1) is located within an ditch at the SR 970 fill toe. Drier than normal precipitation conditions prevailed within the three months prior to fieldwork.	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20ft x 20ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																									
1. _____	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																								
2. _____	_____	_____	_____	_____																									
3. _____	_____	_____	_____	_____																									
4. _____	_____	_____	_____	_____																									
= Total Cover																													
Sapling/Shrub Stratum (Plot size: 15ft x 15ft )	1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> <td></td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 =</td> <td><u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 =</td> <td><u>40</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 =</td> <td><u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td><b>Column Totals:</b> <u>25</u></td> <td>(A)</td> <td><u>55</u> (B)</td> </tr> <tr> <td colspan="3" style="text-align: center;">Prevalence Index = B/A = <u>2.200</u></td> </tr> </table>	Total % Cover of:	Multiply by:		OBL species <u>0</u>	x 1 =	<u>0</u>	FACW species <u>20</u>	x 2 =	<u>40</u>	FAC species <u>5</u>	x 3 =	<u>15</u>	FACU species <u>0</u>	x 4 =	<u>0</u>	UPL species <u>0</u>	x 5 =	<u>0</u>	<b>Column Totals:</b> <u>25</u>	(A)	<u>55</u> (B)	Prevalence Index = B/A = <u>2.200</u>		
Total % Cover of:	Multiply by:																												
OBL species <u>0</u>	x 1 =	<u>0</u>																											
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FAC species <u>5</u>	x 3 =	<u>15</u>																											
FACU species <u>0</u>	x 4 =	<u>0</u>																											
UPL species <u>0</u>	x 5 =	<u>0</u>																											
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Prevalence Index = B/A = <u>2.200</u>																													
2. _____	_____	_____	_____	_____																									
3. _____	_____	_____	_____	_____																									
4. _____	_____	_____	_____	_____																									
5. _____	_____	_____	_____	_____																									
= Total Cover																													
Herb Stratum (Plot size: 5ft x 5ft )	1. <u>Cornus alba</u>	<u>20</u>	<u>Y</u>	<u>80.0</u>	<u>FACW</u>																								
2. <u>Equisetum arvense</u>	<u>5</u>	<u>Y</u>	<u>20.0</u>	<u>FAC</u>																									
3. _____	_____	_____	_____	_____																									
4. _____	_____	_____	_____	_____																									
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8. _____	_____	_____	_____	_____																									
9. _____	_____	_____	_____	_____																									
10. _____	_____	_____	_____	_____																									
11. _____	_____	_____	_____	_____																									
= Total Cover																													
Woody Vine Stratum (Plot size: 15ft x 15ft )	1. _____	_____	_____	_____	<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' <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.																								
2. _____	_____	_____	_____	_____																									
= Total Cover																													
% Bare Ground in Herb Stratum <u>75</u>					<b>Hydrophytic Vegetation Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No																								
Remarks: Ditch bottom is inundated during high river flows. Combined with heavy shading, little vegetation is rooted in the ditch bottom.																													

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

Project/Site: SR 970 Teanaway River WETLAND 1 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP2  
 Investigator(s): Geoffrey Gray Section, Township, Range: T20N-R16E-S25  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 30  
 Subregion (LRR): A Lat: 47°11'42.29"N Long: 120°47'17.65"W Datum: WGS84  
 Soil Map Unit Name: Xerofluvents, 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 Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology 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
Remarks: Pit was dug in the SR 970 fill slope. Drier than normal precipitation conditions prevailed within the three months prior to fieldwork.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>20ft x 20ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>15ft x 15ft</u> )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
_____ = Total Cover					
Herb Stratum (Plot size: <u>5ft x 5ft</u> )					
1. <u>Equisetum arvense</u>	50	Y	50.0	FAC	
2. <u>Symphoricarpos albus</u>	20	Y	20.0	FACU	
3. <u>Comus alba</u>	5	N	5.0	FACW	
4. <u>unknown annual grass</u>	25	Y	25.0	#N/A	
5. _____	_____	_____	_____	_____	
6. _____	_____	_____	_____	_____	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	
9. _____	_____	_____	_____	_____	
10. _____	_____	_____	_____	_____	
11. _____	_____	_____	_____	_____	
_____ = Total Cover					
Woody Vine Stratum (Plot size: <u>15ft x 15ft</u> )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>0</u>					

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 3 (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>5</u>	x 2 = <u>10</u>
FAC species <u>50</u>	x 3 = <u>150</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>75</u> (A)	<u>240</u> (B)
Prevalence Index = B/A = <u>3.200</u>	

**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:  
 Grass is inferred to be non-hydrophytic based on its rooted location at the toe of the fill prism.

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

Project/Site: SR 970 Teanaway River WETLAND 2 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W2-SP1  
 Investigator(s): Geoffrey Gray Section, Township, Range: T20N-R16E-S25  
 Landform (hillslope, terrace, etc.): channel (active) Local relief (concave, convex, none): convex Slope (%): 5  
 Subregion (LRR): A Lat: 47°11'40.28"N Long: 120°47'26.91"W Datum: WGS84  
 Soil Map Unit Name: Xerofluvents, 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 Hydric Soil Present? <input checked="" type="radio"/> Yes <input type="radio"/> No Wetland Hydrology 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
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Remarks:  
 Wetland 2 (W2) is a river bar consisting of medium to large cobbles and no fines. Vegetation is limited to young cottonwoods of various successional sizes. Young alder is present in higher areas. This bar is inundated at higher flows, but is exposed during the summer. Drier than normal precipitation conditions prevailed within the three months prior to fieldwork.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: 20ft x 20ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
= Total Cover					
<b>Sapling/Shrub Stratum (Plot size: 15ft x 15ft )</b>					
1. <i>Populus balsamifera</i>	50	Y	100.0	FAC	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
50 = Total Cover					
<b>Herb Stratum (Plot size: 5ft x 5ft )</b>					
1. <i>Populus balsamifera</i>	20	Y	100.0	FAC	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
6. _____	_____	_____	_____	_____	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	
9. _____	_____	_____	_____	_____	
10. _____	_____	_____	_____	_____	
11. _____	_____	_____	_____	_____	
20 = Total Cover					
<b>Woody Vine Stratum (Plot size: 15ft x 15ft )</b>					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
= Total Cover					
% Bare Ground in Herb Stratum <u>30</u>					

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

	Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>	
FACW species	<u>0</u>	x 2 =	<u>0</u>	
FAC species	<u>70</u>	x 3 =	<u>210</u>	
FACU species	<u>0</u>	x 4 =	<u>0</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>70</u>	(A)	<u>210</u>	(B)
Prevalence Index = B/A = <u>3.000</u>				

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0'

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:

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

Project/Site: SR 970 Teanaway River WETLAND 2 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W2-SP2  
 Investigator(s): Geoffrey Gray Section, Township, Range: T20N-R16E-S25  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 30  
 Subregion (LRR): A Lat: 47°11'39.86"N Long: 120°47'26.82"W Datum: WGS84  
 Soil Map Unit Name: Xerofluvents, 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 checked="" type="radio"/> Yes <input 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	Is the Sampled Area within a Wetland? <input type="radio"/> Yes <input checked="" type="radio"/> No
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**Remarks:**

This pit was dug on the brow of a terrace, populated by mature alders. Drier than normal precipitation conditions prevailed within the three months prior to fieldwork.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: 20ft x 20ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																									
1. <u><i>Alnus rubra</i></u>	<u>100</u>	<u>Y</u>	<u>100.0</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																								
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
_____	<u>100</u>	<u>= Total Cover</u>																																											
<b>Sapling/Shrub Stratum (Plot size: 15ft x 15ft )</b>																																													
1. _____	_____	_____	_____	_____	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Total % Cover of:</td> <td style="width:10%;"></td> <td style="width:10%;">Multiply by:</td> <td style="width:10%;"></td> <td style="width:10%;"></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>0</u></td> <td>x 2 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>100</u></td> <td>x 3 =</td> <td align="center"><u>300</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td>x 4 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td>x 5 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>100</u></td> <td>(A)</td> <td align="center"><u>300</u></td> <td>(B)</td> </tr> <tr> <td align="center" colspan="5">Prevalence Index = B/A = <u>3.000</u></td> </tr> </table>	Total % Cover of:		Multiply by:			OBL species	<u>0</u>	x 1 =	<u>0</u>		FACW species	<u>0</u>	x 2 =	<u>0</u>		FAC species	<u>100</u>	x 3 =	<u>300</u>		FACU species	<u>0</u>	x 4 =	<u>0</u>		UPL species	<u>0</u>	x 5 =	<u>0</u>		Column Totals:	<u>100</u>	(A)	<u>300</u>	(B)	Prevalence Index = B/A = <u>3.000</u>				
Total % Cover of:		Multiply by:																																											
OBL species	<u>0</u>	x 1 =	<u>0</u>																																										
FACW species	<u>0</u>	x 2 =	<u>0</u>																																										
FAC species	<u>100</u>	x 3 =	<u>300</u>																																										
FACU species	<u>0</u>	x 4 =	<u>0</u>																																										
UPL species	<u>0</u>	x 5 =	<u>0</u>																																										
Column Totals:	<u>100</u>	(A)	<u>300</u>	(B)																																									
Prevalence Index = B/A = <u>3.000</u>																																													
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
5. _____	_____	_____	_____	_____																																									
_____	<u>= Total Cover</u>																																												
<b>Herb Stratum (Plot size: 5ft x 5ft )</b>																																													
1. _____	_____	_____	_____	_____	<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' <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.																																								
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
5. _____	_____	_____	_____	_____																																									
6. _____	_____	_____	_____	_____																																									
7. _____	_____	_____	_____	_____																																									
8. _____	_____	_____	_____	_____																																									
9. _____	_____	_____	_____	_____																																									
10. _____	_____	_____	_____	_____																																									
11. _____	_____	_____	_____	_____																																									
_____	<u>= Total Cover</u>																																												
<b>Woody Vine Stratum (Plot size: 15ft x 15ft )</b>																																													
1. _____	_____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> <input checked="" type="radio"/> Yes <input type="radio"/> No																																								
2. _____	_____	_____	_____	_____																																									
_____	<u>= Total Cover</u>																																												
% Bare Ground in Herb Stratum <u>100</u>																																													

**Remarks:**

The dense alder overstory shades out herbaceous species.

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

Project/Site: SR 970 Teanaway River WETLAND 3 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W2-SP1  
 Investigator(s): Geoffrey Gray Section, Township, Range: T20N-R16E-S25  
 Landform (hillslope, terrace, etc.): channel (active) Local relief (concave, convex, none): convex Slope (%): 5  
 Subregion (LRR): A Lat: 47°11'39.71"N Long: 120°47'31.60"W Datum: WGS84  
 Soil Map Unit Name: Xerofluvents, 0 to 5 percent slopes NWI Classification: PEM

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

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

Hydrophytic Vegetation Present? <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	Is the Sampled Area within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
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**Remarks:**

Wetland 3 (W3) is a river bar consisting of medium to large cobbles and no fines. Vegetation is limited to very young cottonwoods < 6' tall. This bar is inundated at higher flows, but is exposed during the summer. Drier than normal precipitation conditions prevailed within the three months prior to fieldwork.

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>20ft x 20ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
= Total Cover					
Sapling/Shrub Stratum (Plot size: <u>15ft x 15ft</u> )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
= Total Cover					
Herb Stratum (Plot size: <u>5ft x 5ft</u> )					
1. <u>Populus balsamifera</u>	60	Y	100.0	FAC	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
6. _____	_____	_____	_____	_____	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	
9. _____	_____	_____	_____	_____	
10. _____	_____	_____	_____	_____	
11. _____	_____	_____	_____	_____	
60 = Total Cover					
Woody Vine Stratum (Plot size: <u>15ft x 15ft</u> )					
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
= Total Cover					
% Bare Ground in Herb Stratum <u>40</u>					

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>60</u>	x 3 = <u>180</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>60</u> (A)	<u>180</u> (B)
Prevalence Index = B/A = <u>3.000</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0'

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:**

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

Project/Site: SR 970 Teanaway River WETLAND 3 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W3-SP2  
 Investigator(s): Geoffrey Gray Section, Township, Range: T20N-R16E-S25  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 30  
 Subregion (LRR): A Lat: 47°11'39.89"N Long: 120°47'31.68"W Datum: WGS84  
 Soil Map Unit Name: Xerofluvents, 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 Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology 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
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Remarks:  
 This pit was dug on the brow of a rocky terrace, in an open, sun-baked zone utilized for parking and river access. Drier than normal precipitation conditions prevailed within the three months prior to fieldwork.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>20ft x 20ft</u> )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																									
1. _____	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0.0%</u> (A/B)																																								
2. _____	_____	_____	_____	_____																																									
3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
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= Total Cover																																													
<b>Sapling/Shrub Stratum (Plot size: <u>15ft x 15ft</u> )</b>																																													
1. _____	_____	_____	_____	_____	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:10%;"></td> <td style="width:10%;">Multiply by:</td> <td style="width:10%;"></td> <td style="width:15%;"></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>0</u></td> <td>x 2 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>0</u></td> <td>x 3 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>5</u></td> <td>x 4 =</td> <td align="center"><u>20</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>20</u></td> <td>x 5 =</td> <td align="center"><u>100</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>25</u></td> <td>(A)</td> <td align="center"><u>120</u></td> <td>(B)</td> </tr> <tr> <td colspan="5" style="text-align: right;">Prevalence Index = B/A = <u>4.800</u></td> </tr> </table>	Total % Cover of:		Multiply by:			OBL species	<u>0</u>	x 1 =	<u>0</u>		FACW species	<u>0</u>	x 2 =	<u>0</u>		FAC species	<u>0</u>	x 3 =	<u>0</u>		FACU species	<u>5</u>	x 4 =	<u>20</u>		UPL species	<u>20</u>	x 5 =	<u>100</u>		Column Totals:	<u>25</u>	(A)	<u>120</u>	(B)	Prevalence Index = B/A = <u>4.800</u>				
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3. _____	_____	_____	_____	_____																																									
4. _____	_____	_____	_____	_____																																									
5. _____	_____	_____	_____	_____																																									
= Total Cover																																													
<b>Herb Stratum (Plot size: <u>5ft x 5ft</u> )</b>																																													
1. <u>Bromus tectorum</u>	<u>15</u>	<u>Y</u>	<u>60.0</u>	<u>UPL</u>																																									
2. <u>Cichorium intybus</u>	<u>5</u>	<u>Y</u>	<u>20.0</u>	<u>FACU</u>																																									
3. <u>Centaurea diffusa</u>	<u>5</u>	<u>Y</u>	<u>20.0</u>	<u>UPL</u>																																									
4. _____	_____	_____	_____	_____																																									
5. _____	_____	_____	_____	_____																																									
6. _____	_____	_____	_____	_____																																									
7. _____	_____	_____	_____	_____																																									
8. _____	_____	_____	_____	_____																																									
9. _____	_____	_____	_____	_____																																									
10. _____	_____	_____	_____	_____																																									
11. _____	_____	_____	_____	_____																																									
= Total Cover																																													
<b>Woody Vine Stratum (Plot size: <u>15ft x 15ft</u> )</b>																																													
1. _____	_____	_____	_____	_____																																									
2. _____	_____	_____	_____	_____																																									
= Total Cover																																													
% Bare Ground in Herb Stratum <u>75</u>																																													

Remarks:



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

Project/Site: SR 970 Teanaway River WETLAND 4 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W4-SP1  
 Investigator(s): Geoffrey Gray Section, Township, Range: T20N-R16E-S25  
 Landform (hillslope, terrace, etc.): channel (active) Local relief (concave, convex, none): convex Slope (%): 5  
 Subregion (LRR): A Lat: 47°11'34.05"N Long: 120°47'36.41"W Datum: WGS84  
 Soil Map Unit Name: Xerofluvents, 0 to 5 percent slopes NWI Classification: PEM

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

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

Hydrophytic Vegetation Present? <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	Is the Sampled Area within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
---	---

Remarks:  
 Wetland 4 (W4) includes a complex of four wetland polygons of various sizes, all located along a riverine overflow channel that is managed by beavers. High groundwater in the summer is impounded behind two dams and low areas excavated into narrow, water-filled channels with emergent vegetation along the banks. Alders are rooted above the wetland/upland transition zone - and are not included within the wetland boundary.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: 20ft x 20ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	<b>Dominance Test worksheet:</b>																
1. _____	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____	_____																	
3. _____	_____	_____	_____	_____																	
4. _____	_____	_____	_____	_____																	
= Total Cover					<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>7</u></td> <td>x 1 = <u>7</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</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>17</u> (A)</td> <td><u>37</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.176</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>7</u>	x 1 = <u>7</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>17</u> (A)	<u>37</u> (B)	Prevalence Index = B/A = <u>2.176</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>7</u>	x 1 = <u>7</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
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FACU species <u>0</u>	x 4 = <u>0</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>17</u> (A)	<u>37</u> (B)																				
Prevalence Index = B/A = <u>2.176</u>																					
= Total Cover																					
<b>Sapling/Shrub Stratum (Plot size: 15ft x 15ft )</b>																					
1. _____	_____	_____	_____	_____																	
2. _____	_____	_____	_____	_____																	
3. _____	_____	_____	_____	_____																	
4. _____	_____	_____	_____	_____																	
5. _____	_____	_____	_____	_____																	
= Total Cover																					
<b>Herb Stratum (Plot size: 5ft x 5ft )</b>																					
1. <u>Veronica americana</u>	<u>5</u>	<u>Y</u>	<u>29.4</u>	<u>OBL</u>																	
2. <u>Alisma plantago-aquatica</u>	<u>2</u>	<u>N</u>	<u>11.8</u>	<u>OBL</u>																	
3. <u>Lotus corniculatus</u>	<u>10</u>	<u>Y</u>	<u>58.8</u>	<u>FAC</u>																	
4. _____	_____	_____	_____	_____																	
5. _____	_____	_____	_____	_____																	
6. _____	_____	_____	_____	_____																	
7. _____	_____	_____	_____	_____																	
8. _____	_____	_____	_____	_____																	
9. _____	_____	_____	_____	_____																	
10. _____	_____	_____	_____	_____																	
11. _____	_____	_____	_____	_____																	
= Total Cover																					
<b>Woody Vine Stratum (Plot size: 15ft x 15ft )</b>																					
1. _____	_____	_____	_____	_____																	
2. _____	_____	_____	_____	_____																	
= Total Cover																					
% Bare Ground in Herb Stratum <u>90</u>																					
<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' <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:  
 Soil pit was dug on a sandy bar in heavy shade. Species diversity in the wetland complex is much higher in sunny areas, although the substrate (sand) is the same. Other herbaceous species in the complex include: P. arundinaceae, G. elata, S. microcarpus, J. effusus, J. ensifolius, J. acuminatus, J. articulatus, E. palustris, L. corniculatus, E. telmateia, and P. ephydriis.

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

Project/Site: SR 970 Teanaway River WETLAND 4 City/County: Kittitas County Sampling Date: 7/15/2020  
 Applicant/Owner: WSDOT State: WA Sampling Point: W4-SP2  
 Investigator(s): Geoffrey Gray Section, Township, Range: T2-N-R16E-S25  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 30  
 Subregion (LRR): A Lat: 47°11'33.90"N Long: 120°47'36.49"W Datum: WGS84  
 Soil Map Unit Name: Teanaway ashy loam, 3 to 10 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 Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Is the Sampled Area within a Wetland?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks: This pit was dug near the toe of an upland slope adjacent to a riverine side channel in which the Wetland 4 complex is located. Drier than normal precipitation conditions prevailed within the three months prior to fieldwork.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: 20ft x 20ft )	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status																																	
1. <u><i>Alnus rubra</i></u>	100	Y	100.0	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																																
2. _____	_____	_____	_____	_____																																	
3. _____	_____	_____	_____	_____																																	
4. _____	_____	_____	_____	_____																																	
100 = Total Cover																																					
<b>Sapling/Shrub Stratum (Plot size: 15ft x 15ft )</b>					<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center">0</td> <td>x 1 =</td> <td align="center">0</td> </tr> <tr> <td>FACW species</td> <td align="center">10</td> <td>x 2 =</td> <td align="center">20</td> </tr> <tr> <td>FAC species</td> <td align="center">100</td> <td>x 3 =</td> <td align="center">300</td> </tr> <tr> <td>FACU species</td> <td align="center">90</td> <td>x 4 =</td> <td align="center">360</td> </tr> <tr> <td>UPL species</td> <td align="center">0</td> <td>x 5 =</td> <td align="center">0</td> </tr> <tr> <td>Column Totals:</td> <td align="center">200</td> <td>(A)</td> <td align="center">680 (B)</td> </tr> <tr> <td align="center" colspan="4">Prevalence Index = B/A = <u>3.400</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	0	x 1 =	0	FACW species	10	x 2 =	20	FAC species	100	x 3 =	300	FACU species	90	x 4 =	360	UPL species	0	x 5 =	0	Column Totals:	200	(A)	680 (B)	Prevalence Index = B/A = <u>3.400</u>			
Total % Cover of:		Multiply by:																																			
OBL species	0	x 1 =	0																																		
FACW species	10	x 2 =	20																																		
FAC species	100	x 3 =	300																																		
FACU species	90	x 4 =	360																																		
UPL species	0	x 5 =	0																																		
Column Totals:	200	(A)	680 (B)																																		
Prevalence Index = B/A = <u>3.400</u>																																					
1. <u><i>Cornus alba</i></u>	10	Y	100.0	FACW																																	
2. _____	_____	_____	_____	_____																																	
3. _____	_____	_____	_____	_____																																	
4. _____	_____	_____	_____	_____																																	
10 = Total Cover																																					
<b>Herb Stratum (Plot size: 5ft x 5ft )</b>					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0' <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.																																
1. <u><i>Symphoricarpos albus</i></u>	30	Y	33.3	FACU																																	
2. <u><i>Rubus parviflorus</i></u>	60	Y	66.7	FACU																																	
3. _____	_____	_____	_____	_____																																	
4. _____	_____	_____	_____	_____																																	
5. _____	_____	_____	_____	_____																																	
6. _____	_____	_____	_____	_____																																	
7. _____	_____	_____	_____	_____																																	
8. _____	_____	_____	_____	_____																																	
9. _____	_____	_____	_____	_____																																	
10. _____	_____	_____	_____	_____																																	
90 = Total Cover																																					
<b>Woody Vine Stratum (Plot size: 15ft x 15ft )</b>																																					
1. _____	_____	_____	_____	_____																																	
2. _____	_____	_____	_____	_____																																	
_____ = Total Cover																																					
% Bare Ground in Herb Stratum <u>10</u>																																					
Remarks:																																					

# Appendix C. Wetland Rating Forms

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## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland 1 (W1) Date of site visit: 6/23/2020

Rated by Geoffrey Gray Trained by Ecology?  Yes  No Date of training 2014, 2018

HGM 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 Google 2020

**OVERALL WETLAND CATEGORY** II (based on functions  or special characteristics  )

### 1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
- X   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	H	
Value	H	H	H	<b>Total</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>21</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>

## 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.

<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, unconfined, 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>		0
Yes = 3    No = 0		
<b>D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)</b>		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	points = 5	5
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
<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 > 1/2 total area of wetland	points = 3	1
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
<b>Total for D 1</b>	<b>Add the points in the boxes above</b>	<b>11</b>

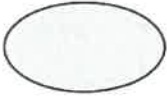





**Rating of Site Potential** If score is:  12 - 16 = H     11 = M     5 = L    *Record the rating on the first page*

<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 &gt; 10% 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>1</b>

**Rating of Landscape Potential** If score is:  3 or 4 = H     1 or 2 = M     = 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	0
<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>2</b>

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

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS - Indicators that site functions to provide important habitat</b>		
<b>H 1.0. Does the wetland have the potential to provide habitat for many species?</b>		
<p><b>H 1.1. Structure of plant community:</b>                      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.</p> <p> <input type="checkbox"/> Aquatic bed  <input type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover  <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  <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  <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt; 30\%</math> cover)  <input type="checkbox"/> Forested (areas where trees have <math>&gt; 30\%</math> cover)                 </p>		<p>4 or more checks: points = 3                      3 checks: points = 2                      2 checks: points = 1                      1 check: points = 0</p> <p>0</p>
<p><b>H 1.2. Is one of the vegetation types Aquatic Bed?</b></p>		<p>Yes = 1    No = 0</p> <p>0</p>
<b>H 1.3. Surface water</b>		
<p><b>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands.</b></p> <p style="text-align: right;"><input type="checkbox"/> Yes = 3 points &amp; go to H 1.4    No = go to H 1.3.2</p>		0
<p><b>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 <math>\frac{1}{4}</math> ac or 10% of its area? Answer yes only if H 1.3.1 is No.</b></p> <p style="text-align: right;"><input type="checkbox"/> Yes = 3    No = 0</p>		0
<b>H 1.4. Richness of plant species</b>		
<p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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)</p> <p># of species _____</p>		<p>Scoring: <math>&gt; 9</math> species: points = 2                      4 - 9 species: points = 1  <math>&lt; 4</math> species: points = 0</p> <p>0</p>
<b>H 1.4. Interspersion of habitats</b>		
<p>Decide from the diagrams below whether interspersion 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.</p>		0
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <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 <b>HIGH = 3 points</b></p>		0

### 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>	
<p><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?  <input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.  <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>  <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.  <input type="checkbox"/> Surface water is present for less than 120 days during the wet season.  <div style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 1.1</b>      <input checked="" type="checkbox"/> No = <b>Not vernal pool</b></div> </p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <input type="checkbox"/> Yes – Go to <b>SC 1.2</b>      <input type="checkbox"/> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. 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.)?  <input type="checkbox"/> Yes = <b>Category II</b>      <input type="checkbox"/> No = <b>Category III</b></p>	
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?  <input type="checkbox"/> The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.  <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).  <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.                      OR does the wetland unit meet two of the following three sub-criteria?  <input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland  <input type="checkbox"/> More than ¼ of the plant cover consists of species listed on Table 4  <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.  <div style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>      <input checked="" type="checkbox"/> No = <b>Not an alkali wetland</b></div> </p>	
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. 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;"><input checked="" type="checkbox"/> Yes - Go to <b>SC 3.2</b>      <input type="checkbox"/> No - Go to <b>SC 3.3</b></div> </p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <div style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>      <input checked="" type="checkbox"/> No = <b>Not WHCV</b></div> </p> <p>SC 3.3. 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;"><input type="checkbox"/> Yes - Contact <b>WNHP/WDNR and to SC 3.4</b>      <input type="checkbox"/> No = <b>Not WHCV</b></div> </p> <p>SC 3.4. 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;"><input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b></div> </p>	



## 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.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 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.

## 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	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
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)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	1
Ponded depressions	R 1.1	1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	2
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	4
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	5

### 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	

**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:**

This wetland is formed upon a bar consisting of medium to large cobbles, exposed at low river flow. Vegetation is dominated by woody shrubs and trees of various successional sizes, although no forested community is present.

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that site functions to reduce flooding and stream erosion		
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i>		
If the ratio is more than 2	points = 10	8
If the ratio is 1 - 2	points = 8	
If the ratio is 1/2 - < 1	points = 4	
If the ratio is 1/4 - < 1/2	points = 2	
If the ratio is < 1/4	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).</i>		
Forest or shrub for more than 2/3 the area of the wetland	points = 6	6
Forest or shrub for > 1/3 area OR emergent plants > 2/3 area	points = 4	
Forest or shrub for > 1/10 area OR emergent plants > 1/3 area	points = 2	
Plants do not meet above criteria	points = 0	
<b>Total for R 4</b>		<b>14</b>

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

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0    No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1    No = 0	0
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0    No = 1	1
<b>Total for R 5</b>		<b>2</b>

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

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of the site has flooding problems that result in damage to human or natural resources	points = 2	2
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		0
		Yes = 2    No = 0
<b>Total for R 6</b>		<b>2</b>

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

<b>H 1.6. Special habitat features:</b> Check the habitat features that are present in the wetland. The number of checks is the number of points.		
<input checked="" 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.		1
<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> )		
<b>Total for H 1</b>		Add the points in the boxes above <b>4</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> Calculate:		
72 % undisturbed habitat + ( _____ 1 % moderate & low intensity land uses / 2 ) = 72.5%		
> 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>		3
20 - 33% of 1 km Polygon <span style="float: right;">points = 2</span>		
10 - 19% of 1 km Polygon <span style="float: right;">points = 1</span>		
< 10 % of 1 km Polygon <span style="float: right;">points = 0</span>		
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> Calculate:		
72 % undisturbed habitat + ( _____ 1 % moderate & low intensity land uses / 2 ) = 72.5%		
Undisturbed habitat > 50% of Polygon <span style="float: right;">points = 3</span>		3
Undisturbed habitat 10 - 50% and in 1 - 3 patches <span style="float: right;">points = 2</span>		
Undisturbed habitat 10 - 50% and > 3 patches <span style="float: right;">points = 1</span>		
Undisturbed habitat < 10% of 1 km Polygon <span style="float: right;">points = 0</span>		
<b>H 2.3 Land use intensity in 1 km Polygon:</b>		
> 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (-2)</span>		0
Does not meet criterion above <span style="float: right;">points = 0</span>		
<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 <span style="float: right;">No = 0</span>		0
<b>Total for H 2</b>		Add the points in the boxes above <b>6</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: <span style="float: right;">points = 2</span>		
<input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)		
<input checked="" 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		2
<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) <span style="float: right;">points = 1</span>		
Site does not meet any of the criteria above <span style="float: right;">points = 0</span>		

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

<p><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></p> <p>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 checked="" type="checkbox"/> No - Go to <b>SC 4.2</b></p> <p>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 checked="" type="checkbox"/> No = <b>Is not a bog for rating</b></p> <p>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></p> <p><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.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 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></p> <p>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></p> <p>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></p>	
<p><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></p> <p><input checked="" 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 checked="" type="checkbox"/> No = <b>Not a forested wetland with special characteristics</b></p>	
<p>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></p> <p>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></p> <p>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></p> <p>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></p>	
<p><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</p>	

addressed elsewhere.

## 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	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
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)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	1
Ponded depressions	R 1.1	1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	2
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	4
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	5

### 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	



**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:**

This wetland is formed upon a bar consisting of medium to large cobbles, exposed at low river flow. Vegetation is dominated by young cottonwoods < 6' tall.

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion</b>		
<b>R 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>R 4.1. Characteristics of the overbank storage the wetland provides:</b>		
<i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i>		
If the ratio is more than 2	points = 10	4
If the ratio is 1 - 2	points = 8	
If the ratio is 1/2 - < 1	points = 4	
If the ratio is 1/4 - < 1/2	points = 2	
If the ratio is < 1/4	points = 1	
<b>R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).</b>		
Forest or shrub for more than 2/3 the area of the wetland	points = 6	4
Forest or shrub for > 1/3 area OR emergent plants > 2/3 area	points = 4	
Forest or shrub for > 1/10 area OR emergent plants > 1/3 area	points = 2	
Plants do not meet above criteria	points = 0	
<b>Total for R 4</b>	<b>Add the points in the boxes above</b>	<b>8</b>

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

<b>R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?</b>		
<b>R 5.1. Is the stream or river adjacent to the wetland downcut?</b>	Yes = 0 No = 1	1
<b>R 5.2. Does the up-gradient watershed include a UGA or incorporated area?</b>	Yes = 1 No = 0	0
<b>R 5.3. Is the up-gradient stream or river controlled by dams?</b>	Yes = 0 No = 1	1
<b>Total for R 5</b>	<b>Add the points in the boxes above</b>	<b>2</b>

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

<b>R 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>R 6.1. Distance to the nearest areas downstream that have flooding problems?</b>		
<i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of the site has flooding problems that result in damage to human or natural resources	points = 2	2
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
<b>R 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 R 6</b>	<b>Add the points in the boxes above</b>	<b>2</b>

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

<b>H 1.6. Special habitat features:</b> Check the habitat features that are present in the wetland. The number of checks is the number of points.		
<input checked="" 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.		1
<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> )		
<b>Total for H 1</b>		Add the points in the boxes above <b>5</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> Calculate: 72 % undisturbed habitat + ( _____ 1 % moderate & low intensity land uses / 2 ) = 72.5%		
> 1/3 (33.3%) of 1 km Polygon	points = 3	<b>3</b>
20 - 33% of 1 km Polygon	points = 2	
10 - 19% of 1 km Polygon	points = 1	
< 10 % of 1 km Polygon	points = 0	
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> Calculate: 72 % undisturbed habitat + ( _____ 1 % moderate & low intensity land uses / 2 ) = 72.5%		
Undisturbed habitat > 50% of Polygon	points = 3	<b>3</b>
Undisturbed habitat 10 - 50% and in 1 - 3 patches	points = 2	
Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
<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	<b>0</b>
<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	<b>0</b>
<b>Total for H 2</b>		Add the points in the boxes above <b>6</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:	points = 2	<b>2</b>
<input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)		
<input checked="" 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)	points = 1	
Site does not meet any of the criteria above	points = 0	

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

<p><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></p> <p>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 checked="" type="checkbox"/> No - Go to <b>SC 4.2</b></p> <p>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 checked="" type="checkbox"/> No = <b>Is not a bog for rating</b></p> <p>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></p> <p><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.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 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></p> <p>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></p> <p>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></p>	
<p><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></p> <p><input checked="" 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 checked="" type="checkbox"/> No = <b>Not a forested wetland with special characteristics</b></p>	
<p>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></p> <p>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></p> <p>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></p> <p>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></p>	
<p><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</p>	

addressed elsewhere.

## 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	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
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)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	1
Ponded depressions	R 1.1	1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	2
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	4
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	5

### 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	

**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:**

This wetland is comprised of a complex of four wetland polygons located within an overflow channel. During the summer, it is maintained by beavers in a high groundwater zone. Vegetation within the wetland is dominated by emergents on the banks.

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion</b>		
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i>		
If the ratio is more than 2	points = 10	8
If the ratio is 1 - 2	points = 8	
If the ratio is 1/2 - < 1	points = 4	
If the ratio is 1/4 - < 1/2	points = 2	
If the ratio is < 1/4	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).</i>		
Forest or shrub for more than 2/3 the area of the wetland	points = 6	4
Forest or shrub for > 1/3 area OR emergent plants > 2/3 area	points = 4	
Forest or shrub for > 1/10 area OR emergent plants > 1/3 area	points = 2	
Plants do not meet above criteria	points = 0	
<b>Total for R 4</b>	<b>Add the points in the boxes above</b>	<b>12</b>

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

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0    No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1    No = 0	0
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0    No = 1	1
<b>Total for R 5</b>	<b>Add the points in the boxes above</b>	<b>2</b>

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

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of the site has flooding problems that result in damage to human or natural resources	points = 2	2
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2    No = 0	0
<b>Total for R 6</b>	<b>Add the points in the boxes above</b>	<b>2</b>

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



<b>H 1.6. Special habitat features:</b> Check the habitat features that are present in the wetland. The number of checks is the number of points.		
<input checked="" 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 checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		4
<input checked="" type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
<input checked="" 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> )		
<b>Total for H 1</b>		Add the points in the boxes above <b>12</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> Calculate: 72 % undisturbed habitat + ( _____ 1 % moderate & low intensity land uses / 2 ) = 72.5%		
> 1/3 (33.3%) of 1 km Polygon	points = 3	3
20 - 33% of 1 km Polygon	points = 2	
10 - 19% of 1 km Polygon	points = 1	
< 10 % of 1 km Polygon	points = 0	
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> Calculate: 72 % undisturbed habitat + ( _____ 1 % moderate & low intensity land uses / 2 ) = 72.5%		
Undisturbed habitat > 50% of Polygon	points = 3	3
Undisturbed habitat 10 - 50% and in 1 - 3 patches	points = 2	
Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
<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>		Add the points in the boxes above <b>6</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:	points = 2	
<input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)		
<input checked="" 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		2
<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)	points = 1	
Site does not meet any of the criteria above	points = 0	

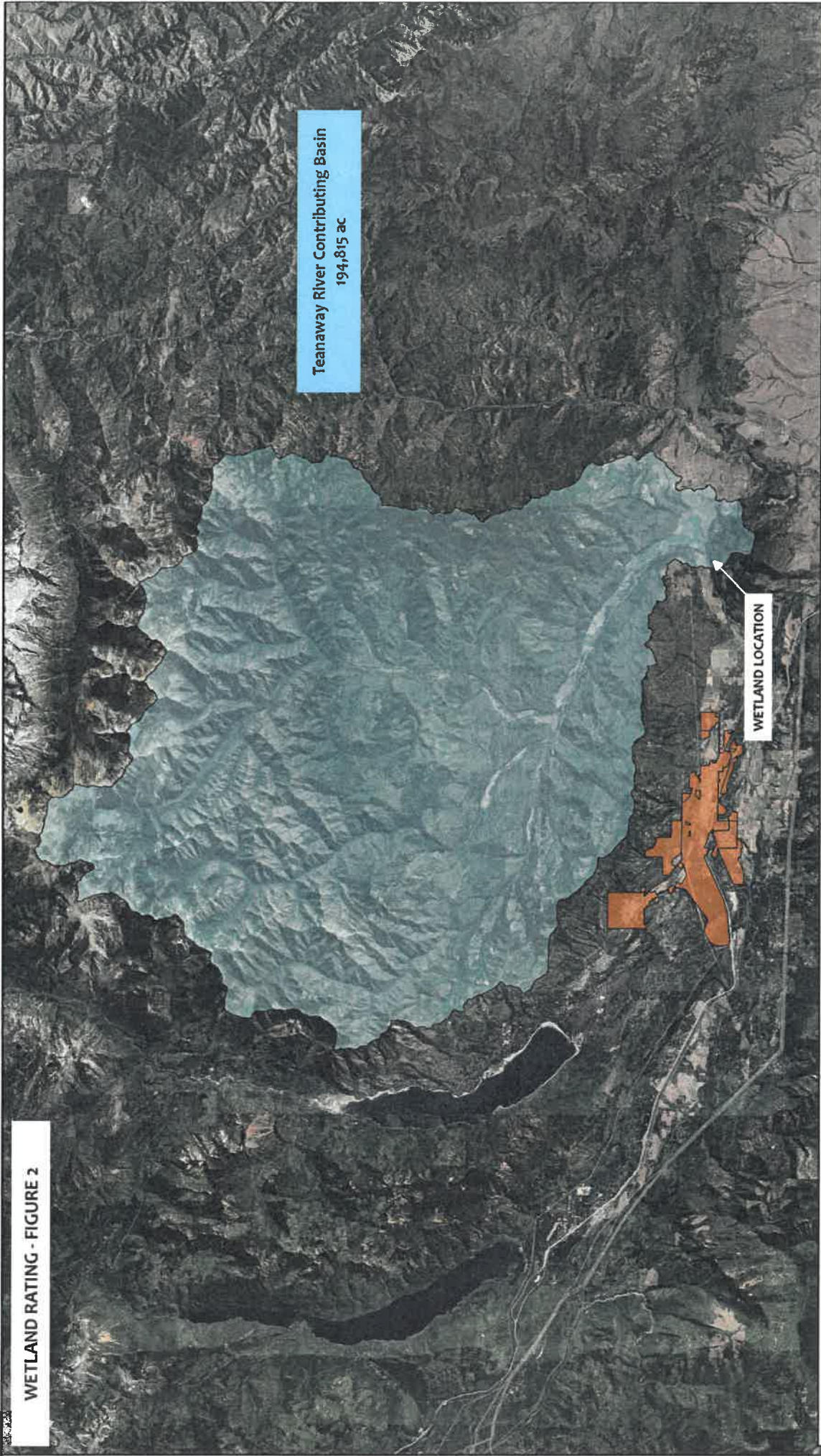
**Rating of Value** If Score is:  2 = H  1 = M  0 = L Record the rating on the first page

<p><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></p> <p>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 checked="" type="checkbox"/> No - Go to <b>SC 4.2</b></p> <p>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 checked="" type="checkbox"/> No = <b>Is not a bog for rating</b></p> <p>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></p> <p><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.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 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></p> <p>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></p> <p>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></p>	
<p><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></p> <p><input checked="" 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 checked="" type="checkbox"/> No = <b>Not a forested wetland with special characteristics</b></p> <p>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></p> <p>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></p> <p>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></p> <p>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></p>	
<p><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</p>	

Wetland 4 Complex (W4)  
addressed elsewhere.

SR 970 Teanaway River MP 6.1

WETLAND RATING - FIGURE 2



Teanaway River Contributing Basin  
194,815 ac

WETLAND LOCATION

- contributing basin
- urban growth area (UGA)

TEANAWAY RIVER BANK STABILIZATION PROJECT  
ECOLOGY RATING FORM - FIGURE 2

State Route 970, Milepost 6.1  
Kittitas County, Washington

Map date: August 4, 2020  
Aerial: Google



# Ecology Rating Form – Figure 4

