

WETLAND ASSESSMENT REPORT

Wetland Delineation Nason Creek River Mile 3.4 to 4.6 Fish Enhancement Project Nason Creek, WA

Yakama Nation Upper Columbia
Habitat Restoration Project

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Table of Contents

Chapter 1. Introduction.....	1
1.1 Scope and Purpose.....	1
1.1 Project Location.....	1
Chapter 2. Methods.....	2
2.1 Wetland Identification, Delineation, and Classification.....	2
2.2 Wetlands and Waters of the State Definitions and Regulatory Requirements	2
Chapter 3. Existing Conditions	4
3.1 Landscape Setting	4
3.2 Site Wetland Delineation Results.....	5
3.2.2 Uplands	16
References	18

Figures

Figure 1. Project Vicinity Map.....	1
Figure 2. Surface waters and wetlands in study area vicinity (USFWS 2020).....	4
Figure 3. Nason Creek Study Area and Delineated Wetlands (APE in yellow). See also Appendix A.	6
Figure 4. Nason Creek North Study Area and Delineated Wetlands A, B, C, and D (APE in yellow). See also Appendix A.	7
Figure 5. Overview of Wetland A near the center of the wetland.	8
Figure 6. Nason Creek Central Study Area and Delineated Wetlands E and F (APE in yellow). See also Appendix A.	9
Figure 7. Overview of Wetland E near its southern boundary of the wetland.	10
Figure 8. Nason Creek South Study Area and Delineated Wetlands H and G (APE in yellow). See also Appendix A.	11
Figure 9. Overview of Wetland D near the southern boundary of the wetland. Nason Creek at right.	12
Figure 10. A lone skunk cabbage (<i>Lysichiton americanus</i>) plant near the center of wetland.	14
Figure 11. Overview of Wetland G near the southern boundary of the wetland.	15
Figure 12. Example of site uplands west of Wetland B.....	16

Tables

Table 1. Wetlands Near the Proposed Project Area.	5
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Appendices

Appendix A — Supplementary Figures
Appendix B — Data Sheets
Appendix C — Rating Forms

Chapter 1. Introduction

1.1 Scope and Purpose

This wetland assessment report has been prepared to meet requirements for wetland determinations according to U.S. Army Corps of Engineers guidelines (USACE 2008). The report contains descriptions of project area natural resources, including wetlands and rivers. The study area was assessed on August 4th and 5th, 2020. Eight wetlands were delineated within the study area.

Information gathered in this report assists project designers in avoiding and/or minimizing impacts to sensitive areas and species; provides information for regulatory reviewers; and provides information for mitigation reports if needed. The report is anticipated to support review by the Yakama Nation, U.S. Army Corps of Engineers (USACE), and/or the Washington State Department of Ecology (Ecology). The purpose of this document is to satisfy federal, state, and local regulations for wetland identification and delineation within the study area. The project proposes to implement instream restoration within Nason Creek to improve habitat for threatened fish species.

1.1 Project Location

This project is located in Chelan County, north and east of Coles Corner and south of Lake Wenatchee State Park. The proposed project site (APE) is composed of five locations, where project elements may affect site wetlands. The APE is within portions of Township 26 North, Range 17 East, Section 9. The site is located within WRIA 25, Wenatchee, and the Lower Nason Creek sub-watershed (HUC 170200110203).

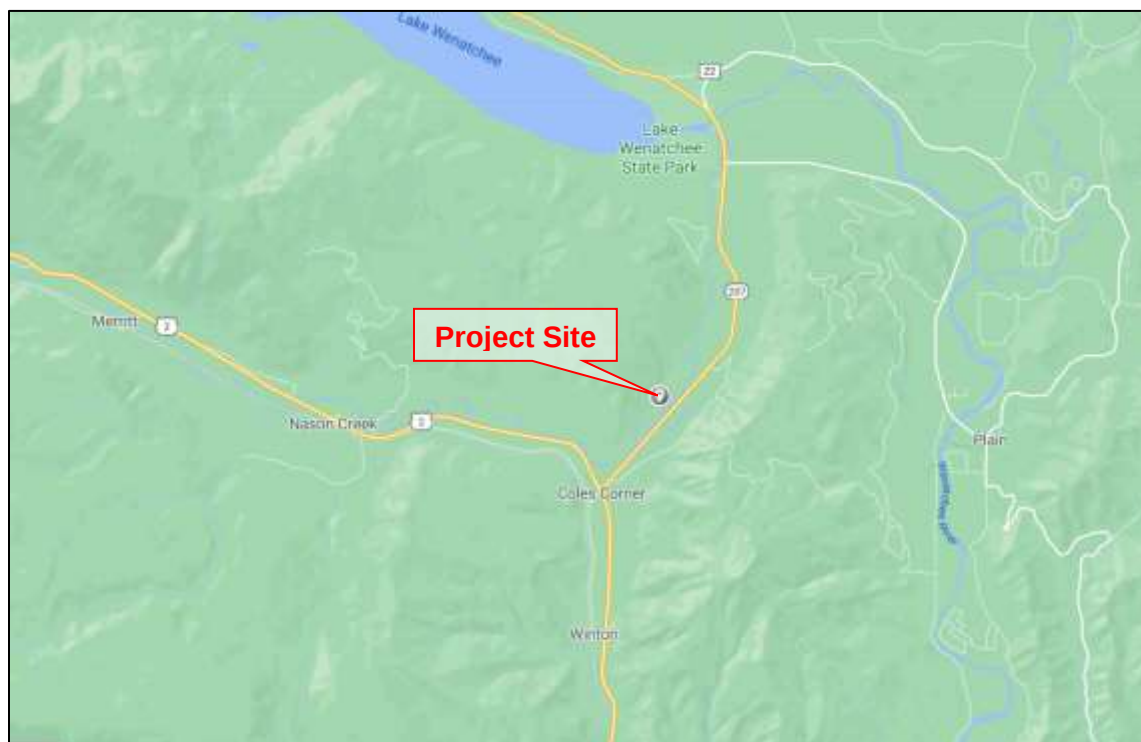


Figure 1. Project Vicinity Map.

Chapter 2. Methods

2.1 Wetland Identification, Delineation, and Classification

Hamer wetland scientists, Adam Crispin (PWS) and Candice Trusty, delineated wetlands according to local, state, and federal guidelines throughout the APE and approximately 100 feet from its boundary (Appendix A). Wetland boundaries were surveyed using a Trimble GEOxt GPS unit. Wetland size for wetland outside the property or project area were estimated using aerial photos, LiDAR digital elevation models (DEM), and ArcGIS 10.6.

Wetland resources were delineated using guidelines and methods described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) as amended with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast (Version 2.0)* (USACE 2010).

Delineators used several tools to identify and classify plants and soils examined within the investigated area. Plant indicator status and scientific plant names were identified using the *National Wetland Plant List: 2014 Update of Wetland Ratings* (Lichvar et al. 2014) and any updates to the *National Wetland Plant List* (USACE 2016). Soil characteristics were recorded and classified using the *Field Book for Describing and Sampling Soils* (USDA, NRCS 2012). Hydric soil conditions were assessed using *Field Indicators of Hydric Soils in the United States, Version 8.1* (USDA, NRCS 2017).

Wetlands delineated were classified according to federal, state, and local systems. The *Classification of Wetlands and Deepwater Habitats of the United States* [Federal Geographic Data Committee (FGDC) 2013] is a descriptive classification, based on physical attributes (i.e., plant community, soils, and water regime). Wetlands perform a variety of biological, physical (hydrologic), and chemical (water quality) functions. For this project, each wetland was assigned a hydrogeomorphic (HGM) classification to more accurately assess impacts and determine appropriate wetland restoration or mitigation (Brinson 1993). Functions and values for wetlands within the project vicinity were classified under HGM and evaluated using the Washington State Wetland Rating System for Eastern Washington (Hruby 2014). Ecology divides wetlands into four hierarchical categories based on specific attributes such as rarity, sensitivity to disturbance, and functions (Hruby 2014). The Ecology classification hierarchy ranges from Category I wetlands, which exhibit outstanding features (rare wetland type, relatively undisturbed or a high sensitivity to disturbance, and high level of functions) to Category IV wetlands, which have the lowest levels of function and are often heavily disturbed.

2.2 Wetlands and Waters of the State Definitions and Regulatory Requirements

Waters of the United States: “All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; All interstate waters including interstate wetlands; All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce...Wetlands adjacent to waters (other than waters that are themselves wetlands) identified above.” (Definition taken from 33 CFR, Part 328.3). “Adjacent” is defined as bordering, contiguous, or

neighboring.

Wetlands: “Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” (Definition taken from 33 CFR, Part 328.3).

Limits of jurisdiction in nontidal waters:

- in the absence of adjacent wetlands, the jurisdiction extends to the ordinary high-water mark;
- when adjacent wetlands are present, the jurisdiction extends beyond the ordinary high-water mark to the limit of the adjacent wetlands;
- when the Water of the United States consists only of wetlands, the jurisdiction extends to the limit of the wetland (taken from 33 CFR, Part 328.3).

Regulatory Requirements:

Wetlands/waters of the state are under the jurisdiction of the Army Corps of Engineers (Corps), state, and Yakama Tribal Code. The Corps has the authority to determine whether a wetland or stream is a water of the U.S. and thus federally regulated under Section 404 of the Clean Water Act (CWA).

Chapter 3. Existing Conditions

3.1 Landscape Setting

Within the project vicinity, land use is primarily commercial forest lands and rural residential zones (County of Chelan 2017). Low-density rural residences occur along State Highway 207 and within the project vicinity; however commercial timber harvest operations are the most common land use type upslope of the APE. In general, the river within the project vicinity is relatively “pristine”; however, Nason Creek likely receives significant stormwater inputs from State Highway 207.

3.1.1 Vicinity Wetlands

Several wetlands are mapped by the USFWS NWI within the study area; most are within the Nason Creek floodplain. Forested, scrub-shrub, and emergent riverine and palustrine wetlands are mapped by NWI (Figure 2). These wetlands are mapped as semi-permanently flooded and seasonally flooded (Ecology 2020). These mapped wetlands are based on a remote sensing-based wetland model. The Natural Heritage Information System has no records of rare plants, high quality wetlands or ecosystems within the study area (DNR 2020).

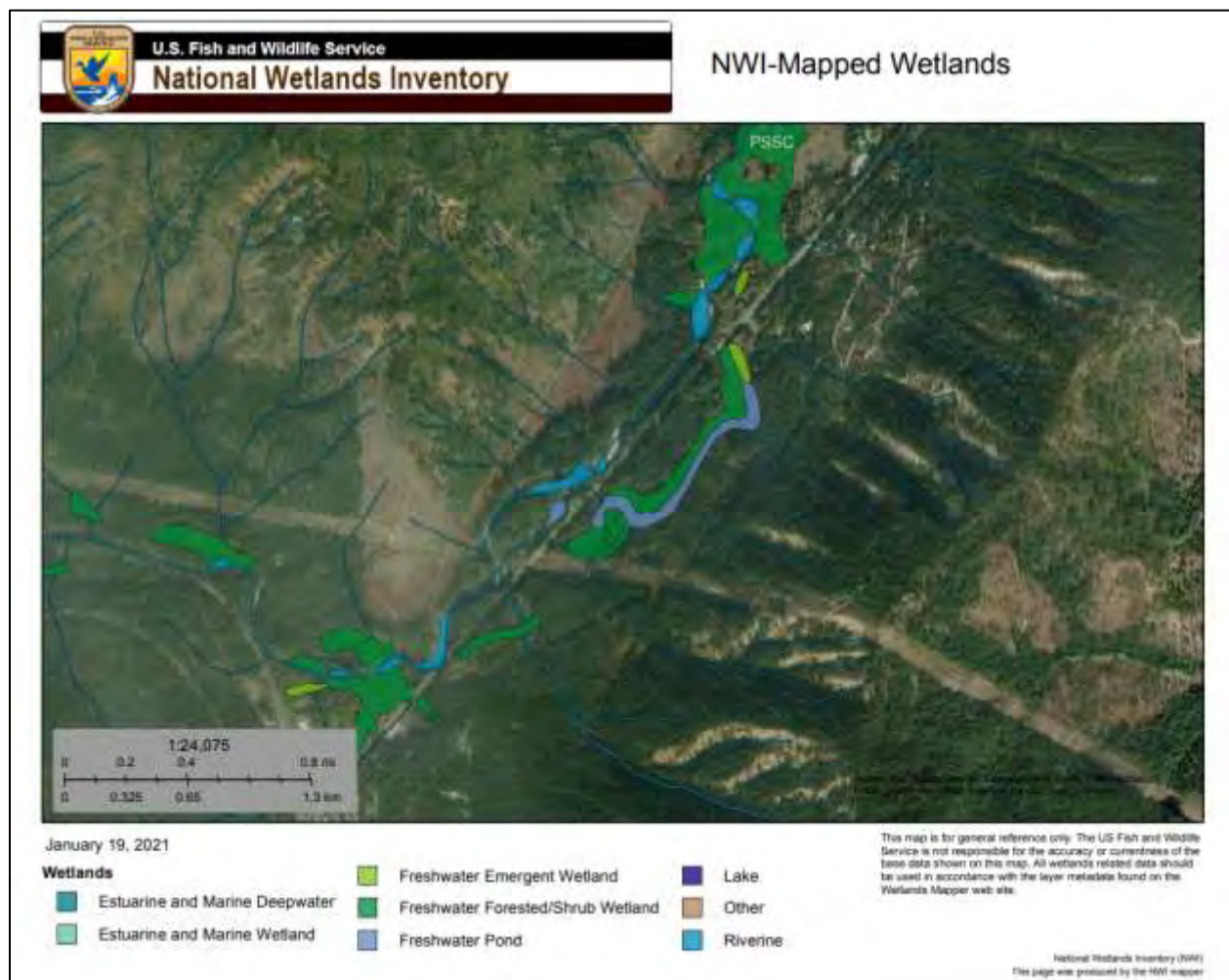


Figure 2. Surface waters and wetlands in study area vicinity (USFWS 2020).

3.2 Site Wetland Delineation Results

Wetland scientists completed USACE field data sheets (Appendix B). The study area contains forested, shrub, and emergent layers in both riverine and depressional wetlands (Figure 3). One wetland was delineated on-site (Wetland A). Wetland A contain forested and shrub plant communities, and generally provide moderate levels of biological, chemical, and physical characteristics. The National Wetlands Inventory (NWI) map indicates previously-delineated features in the vicinity as riverine and palustrine freshwater wetlands.

Table 1. Wetlands Near the Proposed Project Area.

Wetland	Wetland Classification			Wetland Size (acres)
	FGDC ¹	HGM	Ecology Category	
A	PFO/PSS	Depressional/ Riverine	III	0.26
B	PFO/PSS/PEM	Depressional/ Riverine	III	1.21
C	PFO/PSS/PEM	Depressional/ Riverine	II	1.62
D	R3EM	Riverine	II	0.52
E	PFO/PSS/PEM/ PAB	Depressional/ Riverine	II	3.40
F	PFO/PSS	Depressional	III	0.17
G	PFO/PSS/PEM	Depressional	II	1.82
H	PFO/PSS/PEM	Depressional	III	0.14

¹FGDC (formerly Cowardin) or NWI Class based on vegetation: PFO=Palustrine Forested, PSS=Palustrine Scrub-shrub, PEM = Palustrine Emergent, R3EM = Riverine Upper Perennial Emergent.

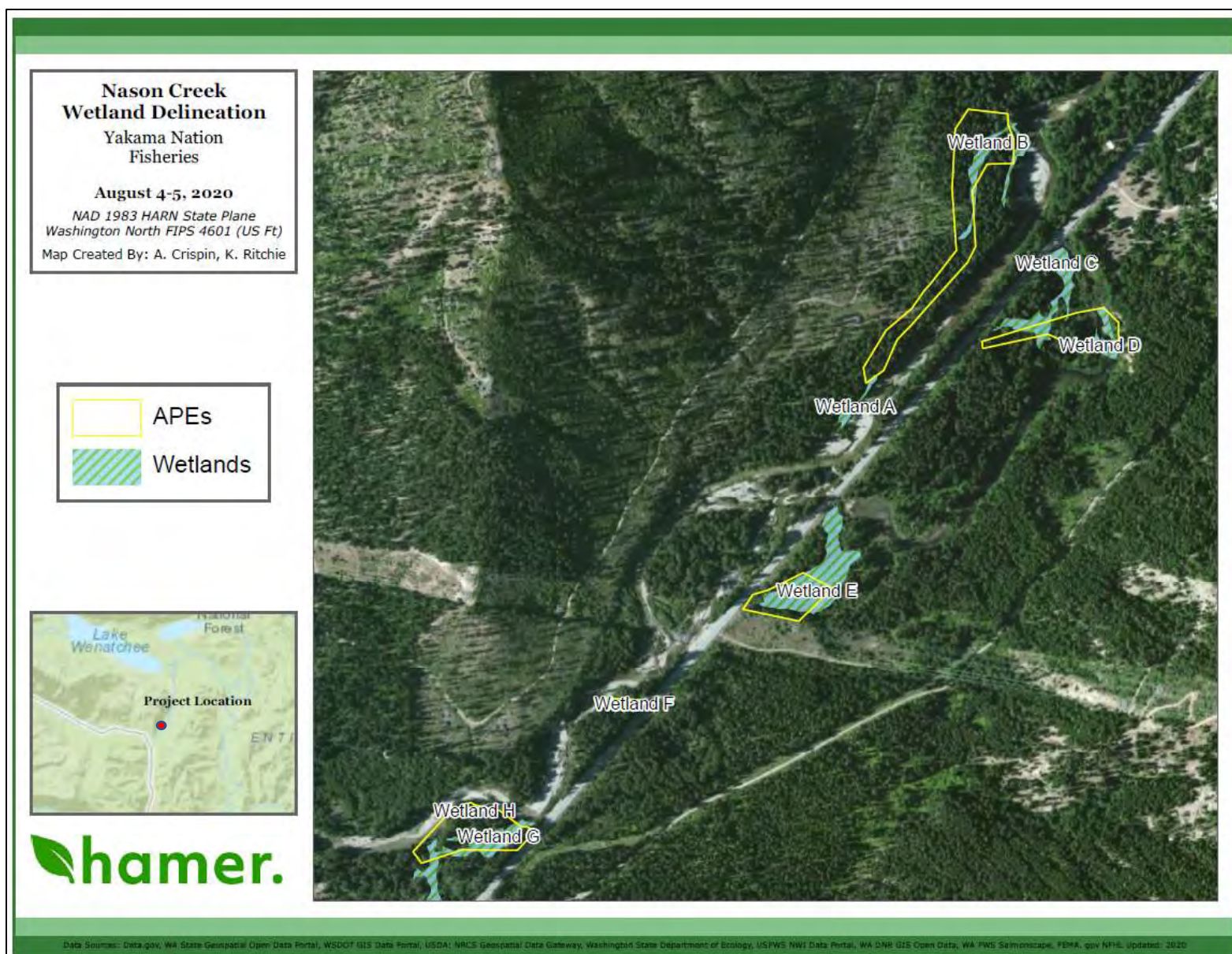


Figure 3. Nason Creek Study Area and Delineated Wetlands (APE in yellow). See also Appendix A.

3.2.1 Wetlands

Wetlands A and B

Wetland A is characterized as a forested and scrub-shrub palustrine wetland (PFO/PSS), and Wetland B as a forested, scrub-shrub, and emergent palustrine wetland (PFO/PSS/PEM). Both wetlands have both depressional and riverine wetland characteristics; however, each was rated using the depressional HGM form (FGDC 2013). The wetlands are located in distinct depressions which appear to be relict side channels that receive flows from Nason Creek. Conditions in the wetlands appear to be seasonally variable, and under winter flood conditions, there are likely periods in which the wetlands are ponded. In Wetland A, Hooker's willow (*Salix hookeriana*) and cattail (*Typha latifolia*) are dominant and in Wetland B the dominant tree layer was composed of black cottonwood (*Populus balsamifera*) and red alder (*Alnus rubra*) with an understory of red osier dogwood (*Cornus sericea*) with emergent layers composed of lady fern (*Athyrium americanum*) and Dewey sedge (*Carex deweyana*) (Figure 4, Figure 5, Appendix B).

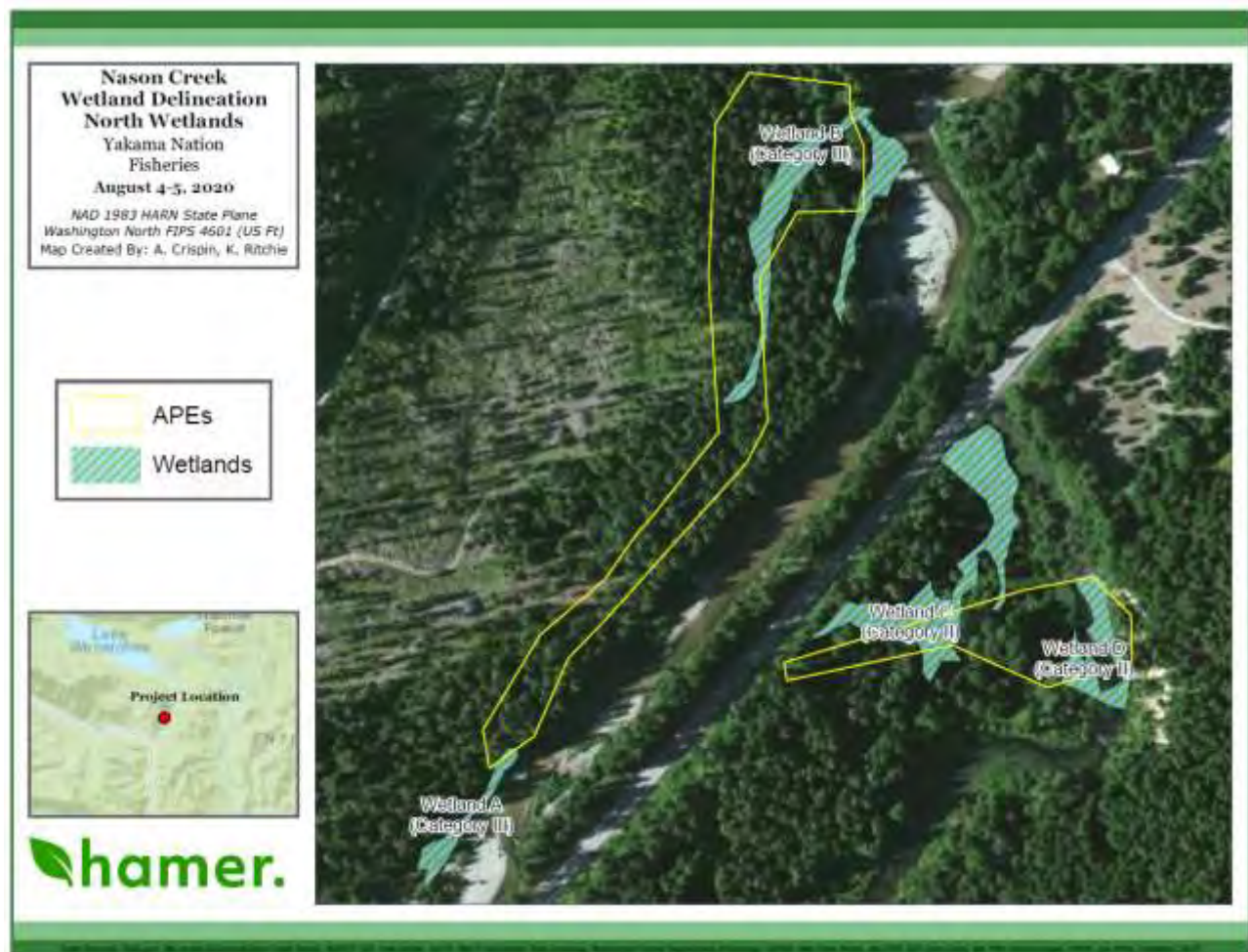


Figure 4. Nason Creek North Study Area and Delineated Wetlands A, B, C, and D (APE in yellow). See also Appendix A.

The hydric soil indicators of Depleted Below Dark Surface (A11) and Depleted Matrix (F3) were identified in soil test pits within the wetlands. The soil profile generally in Wetland A consists of dark gray (10YR 4/1) sandy silt loam with high organic content from 0 to 14 inches with 5%

redoximorphic concentrations (10YR 5/8) and a layer of very dark gray (10YR 3/1) sandy loam from 14 to 18 inches. Wetland B soils consist of black (10YR 2/1) sandy silt loam from 0 to 5 inches and a layer of dark gray (10YR 4/1) sandy silt loam from 5 to 16 inches with 10% redoximorphic concentrations (10YR 5/8) (Appendix B).

Overbank flooding and subsurface flows from Nason Creek likely serve as the main source of hydrology for Wetlands A and B; however, the wetland likely also receives hydrology from direct precipitation and upslope runoff. At the time of the field investigation, the wetlands showed evidence of the following wetland hydrology indicators: Surface Water (A1), High Water Table (A2), Saturation (A3), and Sparsely Vegetated Concave Surfaces (B8) (Appendix B). Both wetlands are in the floodplain of the Nason Creek and may become flooded in some years. Subsurface flows were the likely cause of saturation at the time of the field investigation.

Wetlands A and B are characterized as a depressional wetlands using the HGM system. They are each Category III wetlands according to the current Ecology (2014) rating system based on functions. The wetlands provide moderate levels of water quality, hydrologic, and habitat functions. Wetland Rating system points were assigned as follows:

Wetlands A and B:

Water Quality Score: 7 (Moderate level of function)

Hydrologic Score: 5 (Moderate level of function)

Habitat Score: 6 (Moderate level of function)

Total 18 (Category III)

Wetland functions and values for Wetlands A and B are detailed in Appendix C.



Figure 5. Overview of Wetland A near the center of the wetland.

Wetlands C and E

Wetland C is characterized as a forested, scrub-shrub, and emergent palustrine wetland (PFO/PSS/PEM), and Wetland E as a forested, scrub-shrub, emergent, and aquatic bed palustrine wetland (PFO/PSS/PEM/PAB). Both wetlands have both depressional and riverine wetland characteristics; however, each was rated using the depressional HGM form (FGDC 2013). The wetlands are located in distinct depressions which appear to be relict side channels or oxbows that receive flows from Nason Creek. Conditions in the wetlands appear to be seasonally variable, and under winter flood conditions, there are likely periods in which the wetlands are ponded. Beaver activity (chew marks) was observed in both wetlands, and damming may be contributing to wetland hydrologic conditions. In larger flood events, the wetlands and surrounding areas may also become flooded with overbank waters. In Wetland C, the dominant tree layer was composed of black cottonwood and red alder with an understory of Douglas' Spirea (*Spirea douglasii*) and Nootka rose (*Rosa nutkana*). In Wetland E, red alder is also the dominant tree, with twin berry (*Lonicera involucrata*) and vine maple (*Acer circinatum*) in the shrub layer, and emergent layers composed of lady fern, common horsetail (*Equisetum arvense*), skunk cabbage (*Lysichiton americanus*), and sparse associations of tall mannagrass (*Glyceria maxima*) (Figure 4, Figure 6, Figure 7, Appendix B).



Figure 6. Nason Creek Central Study Area and Delineated Wetlands E and F (APE in yellow). See also Appendix A.

The hydric soil indicators of Sandy Redox (S5) and Depleted Matrix (F3) were identified in soil

test pits within the wetlands. The soil profile generally in Wetland C consists of dark gray (10YR 4/1) silt loam with high organic content from 0 to 16 inches and 5% redoximorphic concentrations (7.5YR 5/8). Wetland E soils consist of very dark grey (10YR 3/1) silt loam from 0 to 4 inches and a layer of gray (10YR 5/1) sandy silt loam from 4 to 16 inches with 20% redoximorphic concentrations (7.5YR 4/6) (Appendix B).

Overbank flooding and subsurface flows from Nason Creek likely serve as the main source of hydrology for Wetlands C and E; however, the wetlands likely also receive hydrology from direct precipitation and upslope runoff. During the field investigation, the wetlands showed evidence of the following wetland hydrology indicators: Surface Water (A1), High Water Table (A2), Saturation (A3), and Sparsely Vegetated Concave Surfaces (B8) (Appendix B).

Wetlands C and E are characterized as a depressional wetlands using the HGM system. They are each Category II wetlands according to the current Ecology (2014) rating system based on functions. The wetlands provide moderate to high levels of water quality, hydrologic, and habitat functions. Wetland Rating system points were assigned as follows:

Wetlands C and E:

Water Quality Score: 7 (Moderate level of function)

Hydrologic Score: 6 (Moderate level of function)

Habitat Score: 8 (High level of function)

Total 21 (Category II)

Wetland functions and values for Wetlands C and E are detailed in Appendix C.



Figure 7. Overview of Wetland E near its southern boundary of the wetland.

Wetland D

Wetland D is characterized as a riverine upper perennial emergent wetland (R3EM) was rated using the riverine HGM form (FGDC 2013). The wetland is located near the ordinary high water mark (OHWM) of Nason Creek and contains some aquatic bed vegetation below the OHWM. Summer low flow conditions may have increased the proliferation of wetland vegetation and soil conditions. In Wetland D, red alder saplings, red osier dogwood, and Douglas' Spirea are dominant in the shrub layer; however, the emergent layers occupy a much larger area in the wetland. The emergent layer is composed of cattail, common horsetail, and lady fern (Figure 8, Appendix B).



Figure 8. Nason Creek South Study Area and Delineated Wetlands H and G (APE in yellow). See also Appendix A.

The hydric soil indicators of Depleted Matrix (F3) were identified in soil test pits within the wetland. The soil profile generally in Wetland C consists of black (10YR 2/1) silt loam with high organic content from 0 to 4 inches and a dark gray (10YR 4/1) silt loam from 4 to 16 inches with 5% redoximorphic concentrations (10YR 5/8) (Appendix B).

Surficial flow from Nason Creek likely serves as the primary source of hydrology for Wetland D (Figure 9); however, the wetland likely also receives hydrology from direct precipitation and upslope runoff (in its southern half). During the field investigation, the wetland showed evidence of the following wetland hydrology indicators: Surface Water (A1), High Water Table (A2),

Saturation (A3), Hydrogen Sulfide Odor (C1) and Sparsely Vegetated Concave Surfaces (B8) (Appendix B).

Wetland D is characterized as a riverine wetland using the HGM system. Wetland D is a Category II wetland according to the current Ecology (2014) rating system based on functions. The wetlands provide moderate to high levels of water quality, hydrologic, and habitat functions. Wetland Rating system points were assigned as follows:

Wetland D:

Water Quality Score: 6 (Moderate level of function)

Hydrologic Score: 5 (Moderate level of function)

Habitat Score: 8 (High level of function)

Total 19 (Category II)

Wetland functions and values for Wetland D are detailed in Appendix C.



Figure 9. Overview of Wetland D near the southern boundary of the wetland. Nason Creek at right.

Wetland F

Wetland F is characterized as a scrub-shrub and emergent palustrine wetland (PSS/PEM) with no apparent tree layer. The wetland is located in a distinct depression between a HWY 207 culvert and an active Nason Creek side channel. Conditions in the wetland appear to be seasonally variable, and under winter flood conditions, there may be periods in which the wetlands are saturated or temporarily ponded. In Wetland F, red osier dogwood, Douglas'

spirea, and Nootka rose are dominant in the shrub layer, an emergent layer composed of sparse affiliations of common horsetail (*Equisetum arvense*) (Figure 6, Appendix B). One skunk cabbage was observed in the herbaceous layer (Figure 10).

The hydric soil indicators of Depleted Matrix (F3) were identified in soil test pits within the wetlands. The soil profile generally in Wetland F consists of dark gray (10YR 4/1) silt loam with high organic content from 0 to 16 inches and 5% redoximorphic concentrations (7.5YR 5/8) (Appendix B).

Runoff from HWY 207 and the culvert is likely the main source of hydrology for Wetland F; however, the wetland likely also receives hydrology from overbank flooding and subsurface flows from Nason Creek, direct precipitation, and upslope runoff. During the field investigation, the wetland showed evidence of the following wetland hydrology indicators: Saturation (A3) and Sparsely Vegetated Concave Surfaces (B8) (Appendix B).

Wetland F is characterized as a depressional wetland using the HGM system. Wetland F is a Category III wetland according to the current Ecology (2014) rating system based on functions. The wetlands provide moderate levels of water quality, hydrologic, and habitat functions. Wetland Rating system points were assigned as follows:

Wetland F:

Water Quality Score: 7 (Moderate level of function)

Hydrologic Score: 5 (Moderate level of function)

Habitat Score: 6 (Moderate level of function)

Total 18 (Category III)

Wetland functions and values for Wetland F are detailed in Appendix C.



Figure 10. A lone skunk cabbage (*Lysichiton americanus*) plant near the center of wetland.

Wetlands G and H

Both Wetlands G and H are characterized as a forested, scrub-shrub, and emergent palustrine wetland (PFO/PSS/PEM). The wetlands have both depressional and riverine wetland characteristics; however, each was rated using the depressional HGM form (FGDC 2013). Wetland G is a large dynamic system that includes several habitat types including riparian areas, ponded areas with some aquatic bed vegetation (Figure 11), and emergent saturated areas where reed canarygrass (*Phalaris arundinacea*) is dominant. Wetland H is much less dynamic; and is sparsely vegetated within a saturated relict side channel. Nonetheless, conditions in the wetlands appear to be seasonally variable, and under winter flood conditions, there are likely periods in which sections of both wetlands are ponded. In Wetland G, the dominant tree layer was composed of black cottonwood and red alder with a mixed understory, and skunk cabbage; in open pasture areas, reed canarygrass is dominant with cattail, tall mannagrass, poison hemlock (*Conium maculatum*), and beaked sedge (*Carex utriculata*). In Wetland H, young red alder is the dominant tree, with red osier dogwood in the shrub layer (Appendix B).

The hydric soil indicators of Depleted Below Dark Surface (A11) and Depleted Matrix (F3) were identified in soil test pits within the wetlands. The soil profile generally in Wetland G consists of very dark gray (10YR 3/1) silt loam with high organic content from 0 to 8 inches and dark gray (10YR 4/1) silt loam from 8 to 16 inches with 5% redoximorphic concentrations (10YR 4/6). Wetland E soils consist of very dark grey (10YR 3/1) silt loam from 0 to 4 inches and a layer of gray (10YR 5/1) sandy silt loam from 4 to 16 inches with 20% redoximorphic concentrations (7.5YR 4/6) (Appendix B).

Overbank flooding and subsurface flows from Nason Creek likely serve as the main source of

hydrology for Wetlands G and H; however, the wetlands likely also receive hydrology from direct precipitation and upslope runoff. During the field investigation, the wetlands showed evidence of the following wetland hydrology indicators: Surface Water (A1), High Water Table (A2), Saturation (A3), and Sparsely Vegetated Concave Surfaces (B8) (Appendix B).

Wetlands G and H are characterized as a depressional wetlands using the HGM system. They are each Category II and Category III wetlands, respectively, according to the current Ecology (2014) rating system based on functions. The wetlands provide low to moderate levels of water quality, hydrologic, and habitat functions. Wetland Rating system points were assigned as follows:

Wetland G:

Water Quality Score: 7 (Moderate level of function)

Hydrologic Score: 5 (Moderate level of function)

Habitat Score: 7 (Moderate level of function)

Total 19 (Category II)

Wetland H:

Water Quality Score: 6 (Moderate level of function)

Hydrologic Score: 3 (Low level of function)

Habitat Score: 7 (Moderate level of function)

Total 16 (Category III)

Wetland functions and values for Wetlands G and H are detailed in Appendix C.



Figure 11. Overview of Wetland G near the southern boundary of the wetland.

3.2.2 Uplands

In addition to the wetland test pits, several upland pits were evaluated including upland areas adjacent to wetlands (paired test pits) and non-adjacent areas. Uplands are dominated by Ponderosa pine (*Pinus ponderosa*), Western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesii*), and Western red cedar (*Thuja plicata*) with an understory of red osier dogwood, common snowberry (*Symphoricarpos albus*), vine maple, and Oregon grape (*Mahonia aquifolium*) (Figure 12). Although some upland test pits included hydrophytic vegetation, in these areas soils were well drained (sandy and gravelly) and did not contain hydric soil indicators. Moreover, these areas were absent of hydrology and indicators for hydrology.

Soils are generally dark brown to dark gray silty and gravelly loams and sands to a depth of 16-inches. Soils were generally dry (Appendix B).

Throughout the upland areas within the APE, a river bar within the historic floodplain of Nason Creek, there were many depressions and relict channels. However, a thorough evaluation of soils and hydrology ruled out these areas.



Figure 12. Example of site uplands west of Wetland B.

LIMITATIONS

This report is based upon information collected in the field and obtained from resources provided by Federal, State, and Local agencies. Conclusions are the professional opinion of the author are subject to approval by the appropriate agencies.

References

- Brinson, M.M. 1993. *A Hydrogeomorphic Classification for Wetlands*. Technical Report WRPDE-4. US Army Engineers Waterways Experiment Station, Vicksburg, MS.
- County of Chelan. 2017. Chelan County Zoning Map Atlas. Accessed on online at: http://www.co.chelan.wa.us/files/community-development/documents/apps_form/Current_Planning/Related%20Documents/Official%20Zoning%20Maps.pdf
- [DNR] Washington State Department of Natural Resources. 2020. WA Wetlands of High Conservation Value Map Viewer. Available from: <http://wadnr.maps.arcgis.com/apps/webappviewer/index.html?id=5cf9e5b22f584ad7a4e2aebc63c47bda>
- [Ecology] Washington Department of Ecology. 2016. Washington State Department of Ecology. Water Quality Assessments/TMDLs. Accessed on line at: <https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx>.
- Ecology. 2018. *Wetlands in Washington State Volume 2 – Protecting and Managing Wetlands*. Appendix 8-D: Guidance on Widths of Buffers and Ratios for Compensatory Mitigation for Use with the Eastern Washington Wetland Rating System. Ecology Publication No. 05-06-008.
- Environmental Laboratory. 1987. Corps of Engineers wetland delineation manual. Technical Report Y-87-1, Environmental Laboratory, Department of the Army, Waterways Experiment Station, Vicksburg, MI.
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- Franklin, J.F. and C.T. Dyrness. 1988. Natural vegetation of Oregon and Washington. Oregon State University Press, Corvallis, OR.
- Hruby, T. (2014). *Washington State Wetland Rating System for Eastern Washington: 2014 Update*. (Publication #14-06-030). Olympia, WA: Washington Department of Ecology.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List: 2016 wetland ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
- StreamNet. 2019. StreamNet Mapper online. Available at: <https://psmfrc.maps.arcgis.com/apps/webappviewer/index.html?id=3be91b0a32a9488a901c3885bbfc2b0b>
- [USACE] U.S. Army Corps of Engineers. 2007. [Regulatory guidance letter No. 07-02.] Located at <http://www.usace.army.mil/cecw/pages/rqlsindx.aspx>.
- USACE. 2010. United States Army Corps of Engineers. Final Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valley, and Coast Region, ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-03-13. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE. 2016. United States Army Corps of Engineers. National Wetland Plant List, Version 3.3. Accessed online at: <http://rsgisias.crrel.usace.army.mil/NWPL/>.

- USDA, NRCS. 2010. United States Department of Agriculture, Natural Resource Conservation Service, in cooperation with the National Technical Committee for Hydric Soils. Field indicators of hydric soils in the United States guide for identifying and delineating hydric soils, version 7.0. Washington, D.C.
- USDA, NRCS. 2012. United States Department of Agriculture, Natural Resource Conservation Service. Field book for describing and sampling soils, version 3.0. September 2012. Accessed online at: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052523.pdf.
- USDA, NRCS. 2015. United States Department of Agriculture, Soil Conservation Service in cooperation with the National Technical Committee for Hydric Soils. Hydric soils of the United States. Available online at <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>.
- USDA, NRCS. 2019. Soil survey of Project Area, Washington. U.S. Department of Agriculture, Natural Resource Conservation Service. Accessed online at: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- USFWS. 1996. United States Fish and Wildlife Service, National Wetlands Inventory. NWI – National wetlands inventory in Washington State. Accessed online at: <http://www.fws.gov/wetlands/Data/Mapper.html>.
- USFWS. 2019. Endangered Species Mapper for project site. Accessed online on at: <https://ecos.fws.gov/ipac/>.
- WDFW. 2008. Washington Department of Fish and Wildlife. Priority Habitat and Species List. Olympia, Washington. 177 pp. Accessed online at: <http://wdfw.wa.gov/conservation/phs/list/>.
- WDFW. 2019a. Washington Department of Fish and Wildlife Priority Habitat and Species Report for site. Accessed online at: <http://apps.wdfw.wa.gov/phsontheweb/>.
- WDFW. 2019b. Washington State Department of Fish and Wildlife (WDFW) Salmonscape Maps. Accessed online at: <http://apps.wdfw.wa.gov/salmonscape/map.html#>.
- WSCC. 2001. Washington State Conservation Commission. Habitat Limiting Factors Yakima River Watershed. Water Resource Inventory Areas 37-39 Final Report.

Appendix A — Supplementary Figures

Nason Creek
Wetland Delineation
Yakama Nation
Fisheries

August 4-5, 2020

NAD 1983 HARN State Plane
Washington North FIPS 4601 (US Ft)

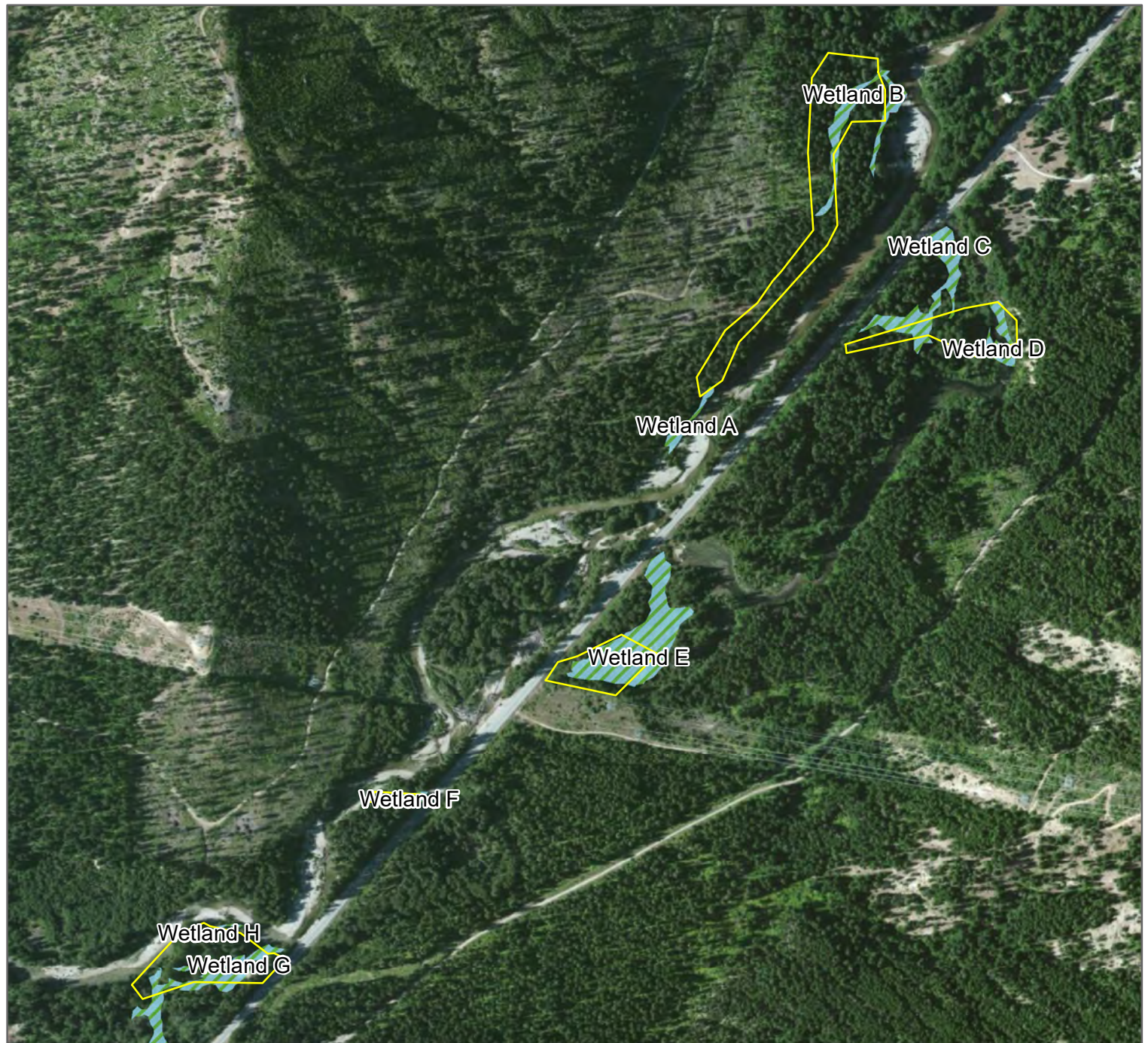
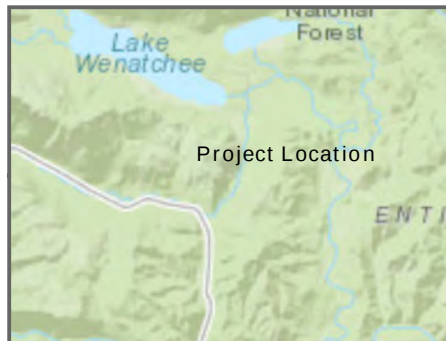
Map Created By: A. Crispin, K. Ritchie



APEs



Wetlands



Nason Creek
Wetland Delineation
North Wetlands
Yakama Nation
Fisheries

August 4-5, 2020

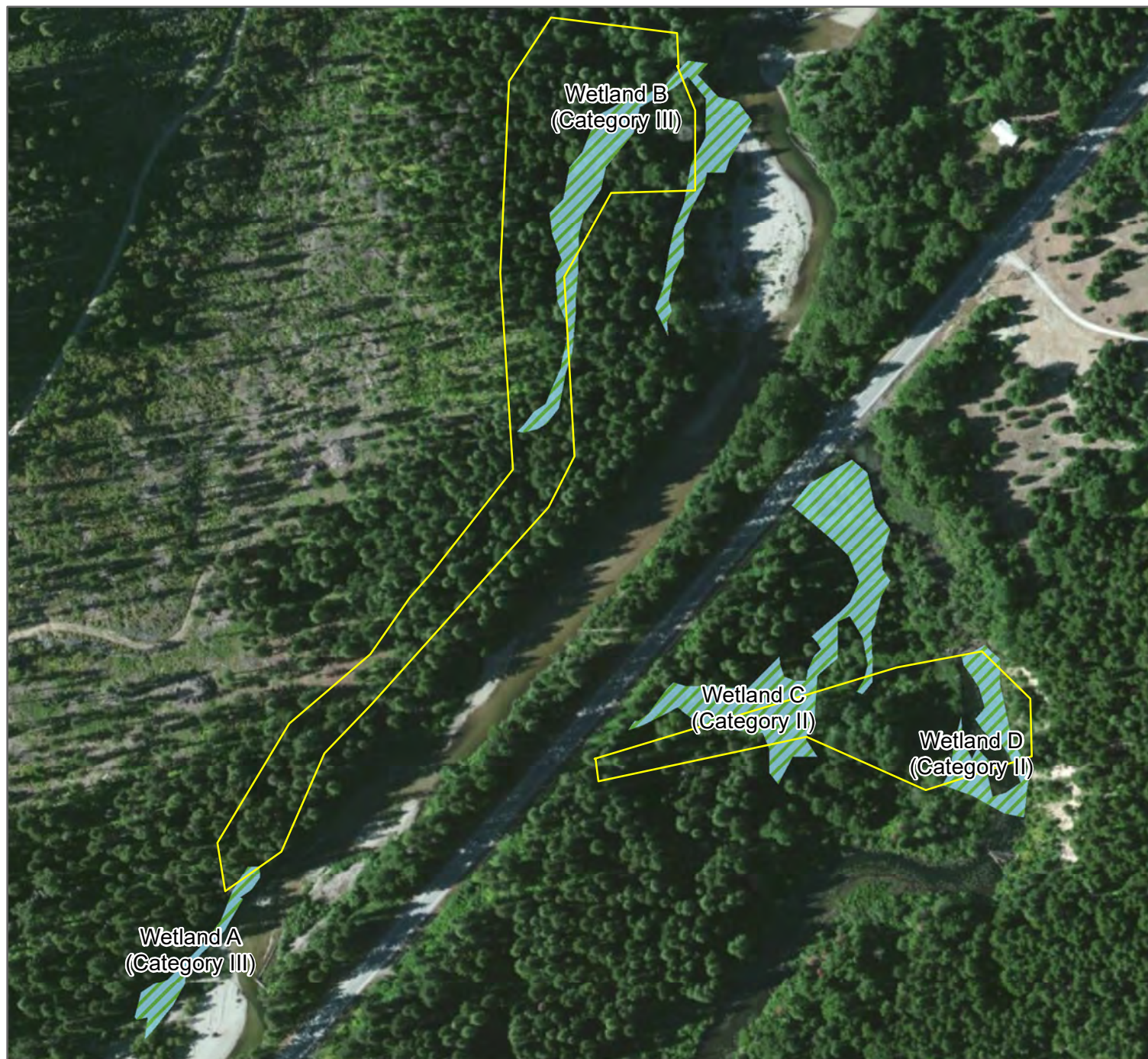
NAD 1983 HARN State Plane
Washington North FIPS 4601 (US Ft)
Map Created By: A. Crispin, K. Ritchie



APEs



Wetlands



Nason Creek
Wetland Delineation
Central Wetlands

Yakama Nation
Fisheries

August 4-5, 2020

NAD 1983 HARN State Plane
Washington North FIPS 4601 (US Ft)
Map Created By: A. Crispin, K. Ritchie



APEs



Wetlands



hamer.

Nason Creek
Wetland Delineation
South Wetlands
Yakama Nation
Fisheries

August 4-5, 2020

NAD 1983 HARN State Plane
Washington North FIPS 4601 (US Ft)
Map Created By: A. Crispin, K. Ritchie



APEs



Wetlands



Appendix B — Data Sheets

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-A1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Goddard cobbly fine sandy loam, 0 to 8 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? ☒ Yes ☐ No Hydric Soil Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
---	---

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dom. Sp.?</th> <th>Relative % Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> Sapling/Shrub Stratum (Plot size: <u>15ft x 15ft</u>) <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Salix hookeriana</u></td><td><u>20</u></td><td><u>Y</u></td><td><u>100.0</u></td><td><u>FACW</u></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;"><u>20</u> = Total Cover</td></tr> </tbody> </table> Herb Stratum (Plot size: <u>15ft x 15ft</u>) <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Typha latifolia</u></td><td><u>80</u></td><td><u>Y</u></td><td><u>94.1</u></td><td><u>OBL</u></td></tr> <tr><td>2. <u>Phalaris arundinacea</u></td><td><u>5</u></td><td><u>N</u></td><td><u>5.9</u></td><td><u>FACW</u></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>8. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>9. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>10. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>11. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;"><u>85</u> = Total Cover</td></tr> </tbody> </table> Woody Vine Stratum (Plot size: _____) <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> % Bare Ground in Herb Stratum _____		Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	1. _____					2. _____					3. _____					4. _____					_____ = Total Cover					1. <u>Salix hookeriana</u>	<u>20</u>	<u>Y</u>	<u>100.0</u>	<u>FACW</u>	2. _____					3. _____					4. _____					5. _____					<u>20</u> = Total Cover					1. <u>Typha latifolia</u>	<u>80</u>	<u>Y</u>	<u>94.1</u>	<u>OBL</u>	2. <u>Phalaris arundinacea</u>	<u>5</u>	<u>N</u>	<u>5.9</u>	<u>FACW</u>	3. _____					4. _____					5. _____					6. _____					7. _____					8. _____					9. _____					10. _____					11. _____					<u>85</u> = Total Cover					1. _____					2. _____					_____ = Total Cover					Dominance Test worksheet: 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) Prevalence Index worksheet: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Total % Cover of:</th> <th colspan="2">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>80</u></td> <td>x 1 =</td> <td><u>80</u></td> </tr> <tr> <td>FACW species</td> <td><u>25</u></td> <td>x 2 =</td> <td><u>50</u></td> </tr> <tr> <td>FAC species</td> <td><u>0</u></td> <td>x 3 =</td> <td><u>0</u></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>105</u> (A)</td> <td></td> <td><u>130</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.238</u> Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0¹ ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) ☐ 5 - Wetland Non-Vascular Plants¹ ☐ Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? ☒ Yes ☐ No	Total % Cover of:		Multiply by:		OBL species	<u>80</u>	x 1 =	<u>80</u>	FACW species	<u>25</u>	x 2 =	<u>50</u>	FAC species	<u>0</u>	x 3 =	<u>0</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>105</u> (A)		<u>130</u> (B)
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Remarks:

SOIL

Sampling Point: SP-A1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-14	10YR	4/1	95	10YR	5/8	5	C	M	Sandy Silt Loam	concentration is prominent
14-18	10YR	3/1	100						Sandy Silt Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present?☒ Yes☐ No

Remarks:

HYDROLOGY

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

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

Secondary Indicators (2 or more required)

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

Field Observations:Surface Water Present? ☒ Yes ☐ NoDepth (inches): 3Water Table Present? ☒ Yes ☐ NoDepth (inches): 4Saturation Present? ☒ Yes ☐ No
(includes capillary fringe)Depth (inches): 0**Wetland Hydrology Present?**☒ Yes☐ No

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

Remarks:

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-A2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Goddard cobbly fine sandy loam, 0 to 8 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? ☒ Yes ☐ No Hydric Soil Present? ☐ Yes ☒ No Wetland Hydrology Present? ☐ Yes ☒ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Alnus rubra</u>	15	Y	33.3	FAC
2. <u>Populus balsamifera</u>	15	Y	33.3	FAC
3. <u>Salix hookeriana</u>	10	Y	22.2	FACW
4. <u>Pseudotsuga menziesii</u>	5	N	11.1	FACU
	45	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		= Total Cover		
Herb Stratum (Plot size: 15ft x 15ft)				
1. <u>Tanacetum vulgare</u>	15	Y	60.0	FACU
2. <u>Cirsium vulgare</u>	10	Y	40.0	FACU
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	25	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
		= Total Cover		
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>10</u>	x 2 = <u>20</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>70</u> (A)	<u>230</u> (B)

Prevalence Index = B/A = 3.286

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

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

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

SOIL

Sampling Point: SP-A2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-5	10YR	5/4	100					Sand	
5-16	10YR	5/4	100					Sand	with gravel and small cobble

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1) (except MLRA 1) ☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Sandy Mucky Mineral (S1) ☐ Depleted Dark Surface (F7) ☐ Sandy Gleyed Matrix (S4) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ 2 cm Muck (A10) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? ☐ Yes ☒ No
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☐ Yes ☒ No Depth (inches): _____ Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? ☐ Yes ☒ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-B1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Goddard cobbly fine sandy loam, 0 to 8 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? ☒ Yes ☐ No Hydric Soil Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: 15ft x 15ft)				
1. <u>Athyrium americanum</u>	80	Y	88.9	FAC
2. <u>Carex deweyana</u>	10	N	11.1	#N/A
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
90 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 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>80</u>	x 3 = <u>240</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>80</u> (A)	<u>240</u> (B)

 Prevalence Index = B/A = 3.000

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-B1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-5	10YR	2/1	100						Sandy Silt Loam	
5-16	10YR	4/1	90	7.5YR	5/8	10	C	M	Sandy Silt Loam	concentration is prominent

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☒ Yes ☐ No

Remarks:

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No Depth (inches): _____	☒ Yes ☐ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☒ Yes ☐ No Depth (inches): 0	

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

Remarks:
Uprooted Pseudotsuga menziesii

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-B2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Goddard cobbly fine sandy loam, 0 to 8 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? ☐ Yes ☒ No Hydric Soil Present? ☐ Yes ☒ No Wetland Hydrology Present? ☐ Yes ☒ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Pseudotsuga menziesii</u>	80	Y	100.0	FACU
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
	80	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Acer circinatum</u>	20	Y	40.0	FAC
2. <u>Rosa nutkana</u>	5	N	10.0	FAC
3. <u>Symphoricarpos albus</u>	10	Y	20.0	FACU
4. <u>Mahonia aquifolium</u>	15	Y	30.0	FACU
5. _____	_____	_____	_____	_____
	50	= Total Cover		
Herb Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Maianthemum dilatatum</u>	10	Y	100.0	FAC
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
	10	= Total Cover		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
	_____	= Total Cover		
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 5 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (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>35</u>	x 3 = <u>105</u>
FACU species <u>105</u>	x 4 = <u>420</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>140</u> (A)	<u>525</u> (B)

 Prevalence Index = B/A = 3.750

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

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Remarks:

SOIL

Sampling Point: SP-B2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-4	10YR	5/3	100				Sandy Silt Loam		
4-16	10YR	6/3	100				Sandy Silt Loam		

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☐ Yes ☒ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No Depth (inches): _____	☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-C1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Goddard cobbly fine sandy loam, 0 to 8 percent slopes NWI Classification: PFO

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>15ft x 15ft</u>)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)														
1. <u>Populus balsamifera</u>	<u>40</u>	<u>Y</u>	<u>72.7</u>	<u>FAC</u>															
2. <u>Alnus rubra</u>	<u>15</u>	<u>Y</u>	<u>27.3</u>	<u>FAC</u>															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
<u>55</u> = Total Cover					Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</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>145</u> (A)</td> <td><u>375</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.586</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>145</u> (A)	<u>375</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>0</u>	x 1 = <u>0</u>																		
FACW species <u>60</u>	x 2 = <u>120</u>																		
FAC species <u>85</u>	x 3 = <u>255</u>																		
FACU species <u>0</u>	x 4 = <u>0</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>145</u> (A)	<u>375</u> (B)																		
Sapling/Shrub Stratum (Plot size: <u>15ft x 15ft</u>)																			
1. <u>Crataegus douglasii</u>	<u>15</u>	<u>N</u>	<u>16.7</u>	<u>FAC</u>															
2. <u>Spiraea douglasii</u>	<u>60</u>	<u>Y</u>	<u>66.7</u>	<u>FACW</u>															
3. <u>Rosa nutkana</u>	<u>15</u>	<u>N</u>	<u>16.7</u>	<u>FAC</u>															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
<u>90</u> = Total Cover																			
Herb Stratum (Plot size: _____)																			
1. _____	_____	_____	_____	_____															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
6. _____	_____	_____	_____	_____															
7. _____	_____	_____	_____	_____															
8. _____	_____	_____	_____	_____															
9. _____	_____	_____	_____	_____															
10. _____	_____	_____	_____	_____															
11. _____	_____	_____	_____	_____															
_____ = Total Cover																			
Woody Vine Stratum (Plot size: _____)																			
1. _____	_____	_____	_____	_____															
2. _____	_____	_____	_____	_____															
_____ = Total Cover																			
% Bare Ground in Herb Stratum _____																			
Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ 5 - Wetland Non-Vascular Plants ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																			
Hydrophytic Vegetation Present? ☒ Yes ☐ No																			

Remarks:

SOIL

Sampling Point: SP-C1

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply) ☒ Surface Water (A1) ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Stunted or Stressed Plants (D1) (LRR A) ☐ Other (Explain in Remarks) Secondary Indicators (2 or more required) ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6) (LRR A) ☐ Frost-Heave Hummocks (D7)		
Field Observations: Surface Water Present? ☒ Yes ☐ No Water Table Present? ☒ Yes ☐ No Saturation Present? ☒ Yes ☐ No (includes capillary fringe) Depth (inches): 4 Depth (inches): 6 Depth (inches): 0 Wetland Hydrology Present? ☒ Yes ☐ No		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

US Army Corps of Engineers (WSDOT Adapted Form - Updated May 2017)

Western Mountains, Valleys, and Coast - Version 2.0

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-C2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Goddard cobbly fine sandy loam, 0 to 8 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? ☒ Yes ☐ No Hydric Soil Present? ☐ Yes ☒ No Wetland Hydrology Present? ☐ Yes ☒ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>15ft x 15ft</u>)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Alnus rubra</u>	<u>30</u>	<u>Y</u>	<u>100.0</u>	<u>FAC</u>
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
	<u>30</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15ft x 15ft</u>)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Cornus alba</u>	<u>40</u>	<u>Y</u>	<u>47.1</u>	<u>FACW</u>
2. <u>Symphoricarpos albus</u>	<u>40</u>	<u>Y</u>	<u>47.1</u>	<u>FACU</u>
3. <u>Spiraea douglasii</u>	<u>5</u>	<u>N</u>	<u>5.9</u>	<u>FACW</u>
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
	<u>85</u>	= Total Cover		
Herb Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
	_____	= Total Cover		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
	_____	= Total Cover		
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>45</u>	x 2 = <u>90</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>40</u>	x 4 = <u>160</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>115</u> (A)	<u>340</u> (B)

 Prevalence Index = B/A = 2.957

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-C2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-8	10YR	3/2	100				Sandy Silt Loam		
8-16	10YR	3/3	100				Sandy Silt Loam		

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☐ Yes ☒ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No Depth (inches): _____	☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-D1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Peoh silt loam 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? ☒ Yes ☐ No Hydric Soil Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: 10x30)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <i>Spiraea douglasii</i>	60	Y	57.1	FACW
2. <i>Alnus rubra</i>	30	Y	28.6	FAC
3. <i>Cornus alba</i>	15	N	14.3	FACW
4. _____				
5. _____				
105 = Total Cover				
Herb Stratum (Plot size: 10x30)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <i>Athyrium americanum</i>	30	Y	40.0	FAC
2. <i>Typha latifolia</i>	15	Y	20.0	OBL
3. <i>Equisetum arvense</i>	30	Y	40.0	FAC
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
75 = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 5 (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>15</u>	x 1 = <u>15</u>
FACW species <u>75</u>	x 2 = <u>150</u>
FAC species <u>90</u>	x 3 = <u>270</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>180</u> (A)	<u>435</u> (B)

 Prevalence Index = B/A = 2.417

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-4	10YR	2/1	100						Silt Loam	
4-16	10YR	4/1	95	10YR	5/8	5	C	M	Silt Loam	concentration is prominent

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☒ Yes ☐ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☒ Yes ☐ No Depth (inches): 10	☒ Yes ☐ No
Water Table Present? ☒ Yes ☐ No Depth (inches): 2	
Saturation Present? ☒ Yes ☐ No Depth (inches): 0 (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/4/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-D2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Peoh silt loam 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? ☒ Yes ☐ No Hydric Soil Present? ☐ Yes ☒ No Wetland Hydrology Present? ☐ Yes ☒ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Alnus rubra</u>	30	Y	100.0	FAC
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
	30	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Acer circinatum</u>	70	Y	77.8	FAC
2. <u>Cornus alba</u>	20	Y	22.2	FACW
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
	90	= Total Cover		

Herb Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Equisetum arvense</u>	30	Y	66.7	FAC
2. <u>Urtica dioica</u>	15	Y	33.3	FAC
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
	45	= Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
	_____	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 5 (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>20</u>	x 2 = <u>40</u>
FAC species <u>145</u>	x 3 = <u>435</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>165</u> (A)	<u>475</u> (B)

Prevalence Index = B/A = 2.879

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☒ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants¹
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present?

☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-5	10YR	3/6	100				Silt Loam		
5-16	10YR	3/2	100				Silt Loam		

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☐ Yes ☒ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No Depth (inches): _____	☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-E1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam NWI Classification: PFO

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)														
1. <u>Alnus rubra</u>	40	Y	100.0	FAC															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
				40 = Total Cover	Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>125</u></td> <td>x 3 = <u>375</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>130</u> (A)</td> <td><u>380</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.923</u>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>125</u>	x 3 = <u>375</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>380</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>5</u>	x 1 = <u>5</u>																		
FACW species <u>0</u>	x 2 = <u>0</u>																		
FAC species <u>125</u>	x 3 = <u>375</u>																		
FACU species <u>0</u>	x 4 = <u>0</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>130</u> (A)	<u>380</u> (B)																		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)																			
1. <u>Lonicera involucrata</u>	20	Y	66.7	FAC															
2. <u>Acer circinatum</u>	10	Y	33.3	FAC															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
				30 = Total Cover															
Herb Stratum (Plot size: 15ft x 15ft)																			
1. <u>Athyrium americanum</u>	40	Y	66.7	FAC															
2. <u>Glyceria maxima</u>	5	N	8.3	OBL															
3. <u>Equisetum arvense</u>	15	Y	25.0	FAC															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
6. _____	_____	_____	_____	_____															
7. _____	_____	_____	_____	_____															
8. _____	_____	_____	_____	_____															
9. _____	_____	_____	_____	_____															
10. _____	_____	_____	_____	_____															
11. _____	_____	_____	_____	_____															
				60 = Total Cover															
Woody Vine Stratum (Plot size: _____)																			
1. _____	_____	_____	_____	_____															
2. _____	_____	_____	_____	_____															
				_____ = Total Cover															
% Bare Ground in Herb Stratum _____																			

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

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

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-E1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-4	10YR	3/1	100						Silt Loam	
4-16	10YR	5/1	100	7.5YR	4/6	20	C	M	Sand	with gravel

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☒ Yes ☐ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☒ Yes ☐ No Depth (inches): <u>2</u>	☒ Yes ☐ No
Water Table Present? ☒ Yes ☐ No Depth (inches): <u>4</u>	
Saturation Present? ☒ Yes ☐ No Depth (inches): <u>0</u> (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-E2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam 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? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Hydric Soil Present? ☐ Yes ☒ No	
Wetland Hydrology Present? ☐ Yes ☒ No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>100.0%</u> (A/B)														
1. <u>Alnus rubra</u>	<u>70</u>	<u>Y</u>	<u>82.4</u>	<u>FAC</u>															
2. <u>Pseudotsuga menziesii</u>	<u>15</u>	<u>N</u>	<u>17.6</u>	<u>FACU</u>															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
<u>85</u> = Total Cover					Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>110</u></td> <td>x 3 = <u>330</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>165</u> (A)</td> <td><u>470</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.848</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>110</u>	x 3 = <u>330</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>165</u> (A)	<u>470</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>0</u>	x 1 = <u>0</u>																		
FACW species <u>40</u>	x 2 = <u>80</u>																		
FAC species <u>110</u>	x 3 = <u>330</u>																		
FACU species <u>15</u>	x 4 = <u>60</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>165</u> (A)	<u>470</u> (B)																		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)																			
1. <u>Cornus alba</u>	<u>40</u>	<u>Y</u>	<u>100.0</u>	<u>FACW</u>															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
<u>40</u> = Total Cover																			
Herb Stratum (Plot size: 15ft x 15ft)																			
1. <u>Geum macrophyllum</u>	<u>30</u>	<u>Y</u>	<u>75.0</u>	<u>FAC</u>															
2. <u>Urtica dioica</u>	<u>10</u>	<u>Y</u>	<u>25.0</u>	<u>FAC</u>															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
6. _____	_____	_____	_____	_____															
7. _____	_____	_____	_____	_____															
8. _____	_____	_____	_____	_____															
9. _____	_____	_____	_____	_____															
10. _____	_____	_____	_____	_____															
11. _____	_____	_____	_____	_____															
<u>40</u> = Total Cover																			
Woody Vine Stratum (Plot size: _____)																			
1. _____	_____	_____	_____	_____															
2. _____	_____	_____	_____	_____															
_____ = Total Cover																			
% Bare Ground in Herb Stratum _____																			

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

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

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-E2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-4	10YR	2/2	100				Sandy Silt Loam		
4-10	10YR	2/2	100				Sandy Silt Loam	with small cobble	

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: <u>fill</u>	☐ Yes ☒ No
Depth (inches): <u>10</u>	

Remarks:

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No	☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No	
Saturation Present? ☐ Yes ☒ No	
(includes capillary fringe)	

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

Remarks:

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-F1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam 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? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Cornus alba</u>	85	Y	85.0	FACW
2. <u>Spiraea douglasii</u>	10	N	10.0	FACW
3. <u>Rosa nutkana</u>	5	N	5.0	FAC
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
100 = Total Cover				
Herb Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Equisetum arvense</u>	5	Y	100.0	FAC
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
5 = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>85</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>95</u>	x 2 = <u>190</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>105</u> (A)	<u>220</u> (B)

Prevalence Index = B/A = 2.095

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

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

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-F1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-2	10YR	2/1	100						Silt Loam	
2-16	10YR	4/1	95	10YR	5/8	5	C	M	Silt Loam	concentration is prominent

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☒ Yes ☐ No

Remarks:

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No Depth (inches): _____	☒ Yes ☐ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☒ Yes ☐ No Depth (inches): 2	

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

Remarks:

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-F2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam 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? ☐ Yes ☒ No Hydric Soil Present? ☐ Yes ☒ No Wetland Hydrology Present? ☐ Yes ☒ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Pseudotsuga menziesii</u>	40	Y	53.3	FACU
2. <u>Pinus contorta</u>	35	Y	46.7	FAC
3. _____				
4. _____				
	75	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Acer circinatum</u>	20	Y	80.0	FAC
2. <u>Mahonia aquifolium</u>	5	Y	20.0	FACU
3. _____				
4. _____				
5. _____				
	25	= Total Cover		
Herb Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
		= Total Cover		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
		= Total Cover		
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 4 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (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>55</u>	x 3 = <u>165</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>345</u> (B)

 Prevalence Index = B/A = 3.450

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

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Remarks:

SOIL

Sampling Point: SP-F2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-4	10YR	3/4	100					Sandy Silt Loam	
4-16	10YR	4/3	100					Sandy Silt Loam	

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☐ Yes ☒ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No Depth (inches): _____	☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-G1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam NWI Classification: PEM

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>15ft x 15ft</u>)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. <u>Phalaris arundinacea</u>	<u>80</u>	<u>Y</u>	<u>80.0</u>	<u>FACW</u>
2. <u>Typha latifolia</u>	<u>5</u>	<u>N</u>	<u>5.0</u>	<u>OBL</u>
3. <u>Glyceria maxima</u>	<u>5</u>	<u>N</u>	<u>5.0</u>	<u>OBL</u>
4. <u>Conium maculatum</u>	<u>5</u>	<u>N</u>	<u>5.0</u>	<u>FAC</u>
5. <u>Carex utriculata</u>	<u>5</u>	<u>N</u>	<u>5.0</u>	<u>OBL</u>
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</u>
FACW species <u>80</u>	x 2 = <u>160</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>
Column Totals: <u>100</u> (A)	<u>190</u> (B)

Prevalence Index = B/A = 1.900

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

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

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-G1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-8	10YR	3/1	100						Sandy Silt Loam	high organics
8-16	10YR	4/1	95	10YR	4/6	5	C	M	Sandy Silt Loam	concentration is prominent

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☒ Yes ☐ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☒ Yes ☐ No Depth (inches): <u>1</u>	☒ Yes ☐ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☒ Yes ☐ No Depth (inches): <u>0</u> (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-G2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam 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? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Hydric Soil Present? ☐ Yes ☒ No	
Wetland Hydrology Present? ☐ Yes ☒ No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Dominance Test worksheet:
1. <u>Crataegus douglasii</u>	30	Y	60.0	FAC	
2. <u>Alnus rubra</u>	20	Y	40.0	FAC	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
4. _____					
	50	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)					Prevalence Index worksheet:
1. <u>Cornus alba</u>	60	Y	80.0	FACW	
2. <u>Symphoricarpos albus</u>	15	Y	20.0	FACU	OBL species <u>0</u> x 1 = <u>0</u>
3. _____					FACW species <u>60</u> x 2 = <u>120</u>
4. _____					FAC species <u>50</u> x 3 = <u>150</u>
5. _____					FACU species <u>20</u> x 4 = <u>80</u>
	75	= Total Cover			UPL species <u>0</u> x 5 = <u>0</u>
Herb Stratum (Plot size: 15ft x 15ft)					Column Totals: <u>130</u> (A) <u>350</u> (B)
1. <u>Tanacetum vulgare</u>	5	Y	100.0	FACU	Prevalence Index = B/A = <u>2.692</u>
2. _____					Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ 5 - Wetland Non-Vascular Plants ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	5	= Total Cover			
Woody Vine Stratum (Plot size: _____)					Hydrophytic Vegetation Present? ☒ Yes ☐ No
1. _____					
2. _____					
		= Total Cover			
% Bare Ground in Herb Stratum _____					

Remarks:

SOIL

Sampling Point: SP-G2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-2	10YR	3/2	100				Silt Loam		
2-16	10YR	3/3	100				Silt Loam		

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	☐ Yes ☒ No

Remarks: _____

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No Depth (inches): _____	☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No Depth (inches): _____	
Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)	

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

Remarks: _____

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-H1
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam NWI Classification: PFO

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)														
1. <u>Alnus rubra</u>	<u>60</u>	<u>Y</u>	<u>100.0</u>	<u>FAC</u>															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
<u>60</u> = Total Cover					Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>75</u></td> <td>x 3 = <u>225</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>95</u> (A)</td> <td><u>265</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.789</u>	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>75</u>	x 3 = <u>225</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>95</u> (A)	<u>265</u> (B)
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>75</u>	x 3 = <u>225</u>																		
FACU species <u>0</u>	x 4 = <u>0</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>95</u> (A)	<u>265</u> (B)																		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)																			
1. <u>Cornus alba</u>	<u>20</u>	<u>Y</u>	<u>57.1</u>	<u>FACW</u>															
2. <u>Alnus rubra</u>	<u>15</u>	<u>Y</u>	<u>42.9</u>	<u>FAC</u>															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
<u>35</u> = Total Cover																			
Herb Stratum (Plot size: 15ft x 15ft)																			
1. _____	_____	_____	_____	_____															
2. _____	_____	_____	_____	_____															
3. _____	_____	_____	_____	_____															
4. _____	_____	_____	_____	_____															
5. _____	_____	_____	_____	_____															
6. _____	_____	_____	_____	_____															
7. _____	_____	_____	_____	_____															
8. _____	_____	_____	_____	_____															
9. _____	_____	_____	_____	_____															
10. _____	_____	_____	_____	_____															
11. _____	_____	_____	_____	_____															
_____ = Total Cover																			
Woody Vine Stratum (Plot size: _____)																			
1. _____	_____	_____	_____	_____															
2. _____	_____	_____	_____	_____															
_____ = Total Cover																			
% Bare Ground in Herb Stratum _____																			
Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ 5 - Wetland Non-Vascular Plants ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																			
Hydrophytic Vegetation Present? ☒ Yes ☐ No																			

Remarks:

SOIL

Sampling Point: SP-H1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-2	10YR	2/1	100						Silt Loam	
2-10	10YR	3/1	95	10YR	5/8	5	C	M	Sandy Silt Loam	concentration is prominent

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: <u>large cobble</u>	☒ Yes ☐ No
Depth (inches): <u>10</u>	

Remarks:

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No	☒ Yes ☐ No
Water Table Present? ☐ Yes ☒ No	
Saturation Present? ☐ Yes ☒ No	
(includes capillary fringe)	

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

Remarks:

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

Project/Site: Nason Creek Wetland Delineation City/County: Chelan Sampling Date: 8/5/2020
 Applicant/Owner: Yakama Nation State: WA Sampling Point: SP-H2
 Investigator(s): Adam Crispin, Candice Trusty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 47.774464 Long: -120.719456 Datum: NAD83HARN
 Soil Map Unit Name: Beverly gravelly fine sandy loam 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? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☐ Yes ☒ No
Hydric Soil Present? ☐ Yes ☒ No	
Wetland Hydrology Present? ☐ Yes ☒ No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)														
1. <u>Populus balsamifera</u>	30	Y	33.3	FAC															
2. <u>Alnus rubra</u>	20	Y	22.2	FAC															
3. <u>Pinus contorta</u>	40	Y	44.4	FAC															
4. _____					Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>100</u></td> <td>x 3 = <u>300</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>520</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.811</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>100</u>	x 3 = <u>300</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>520</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>0</u>	x 1 = <u>0</u>																		
FACW species <u>60</u>	x 2 = <u>120</u>																		
FAC species <u>100</u>	x 3 = <u>300</u>																		
FACU species <u>25</u>	x 4 = <u>100</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>185</u> (A)	<u>520</u> (B)																		
	90	= Total Cover																	
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)																			
1. <u>Cornus alba</u>	60	Y	80.0	FACW															
2. <u>Symphoricarpos albus</u>	15	Y	20.0	FACU															
3. _____																			
4. _____																			
5. _____																			
	75	= Total Cover																	
Herb Stratum (Plot size: 15ft x 15ft)																			
1. <u>Rumex crispus</u>	5	Y	25.0	FAC															
2. <u>Tolmiea menziesii</u>	5	Y	25.0	FAC															
3. <u>Geranium robertianum</u>	10	Y	50.0	FACU															
4. _____																			
5. _____																			
6. _____																			
7. _____																			
8. _____																			
9. _____																			
10. _____																			
11. _____																			
	20	= Total Cover																	
Woody Vine Stratum (Plot size: _____)																			
1. _____																			
2. _____																			
		= Total Cover																	
% Bare Ground in Herb Stratum _____																			

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants¹
☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present?

☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: SP-H2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-2	10YR	3/2	100					silty sand	
2-10	10YR	4/3	100					silty sand	

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

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

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

Restrictive Layer (if present):	Hydric Soil Present?
Type: <u>cobble</u>	☐ Yes ☒ No
Depth (inches): <u>10</u>	

Remarks:

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present?
Surface Water Present? ☐ Yes ☒ No	☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No	
Saturation Present? ☐ Yes ☒ No	
(includes capillary fringe)	

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

Remarks:

Appendix C — Rating Forms

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetlands A, B, and C Date of site visit: 8/4/2020Rated by Adam Crispin Trained by Ecology? ☒ Yes ☐ No Date of training 11/13/2019HGM 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 Earth**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

- Category I** - Total score = 22 - 27
- Category II** - Total score = 19 - 21
- X **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	M	
Landscape Potential	L	L	H	
Value	H	L	M	Total
Score Based on Ratings	6	5	7	18

**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	

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	x
Map of the contributing basin	D 5.3	x
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	x
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	x

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	

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.

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:

Wetland has multiple classes but is overall Depressional.

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0. Does the site have the potential to improve water quality?****D 1.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|--|------------|---|
| Wetland has no surface water outlet | points = 5 | 3 |
| ☒ Wetland has an intermittently flowing outlet | points = 3 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 3 | |
| Wetland has a permanently flowing, unconstricted, surface outlet | points = 1 | |

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)

Yes = 3 No = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- | | | |
|--|------------|---|
| Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area | points = 5 | 5 |
| Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area | points = 3 | |
| Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area | points = 1 | |
| Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area | points = 0 | |

D 1.4. Characteristics of seasonal ponding or inundation:*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- | | | |
|---|------------|---|
| Area seasonally ponded is $> \frac{1}{2}$ total area of wetland | points = 3 | 1 |
| Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland | points = 1 | |
| Area seasonally ponded is $< \frac{1}{4}$ total area of wetland | points = 0 | |

Total for D 1

Add the points in the boxes above

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

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

0

D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

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?

Source Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

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

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

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?

Yes = 1 No = 0

0

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]?

Yes = 1 No = 0

1

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)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

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

Record the rating on the first page

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 8 | 4 |
| ☐ Wetland has an intermittently flowing outlet | points = 4 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 4 | |
| Wetland has a permanently flowing unconstricted surface outlet | points = 0 | |
| <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i> | | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- | | | |
|---|------------|---|
| Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 8 | 2 |
| Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 6 | |
| ☐ The wetland is a headwater wetland | points = 4 | |
| ☐ Seasonal ponding: 1 ft - < 2 ft | points = 4 | |
| Seasonal ponding: 6 in - < 1 ft | points = 2 | |
| Seasonal ponding: < 6 in or wetland has only saturated soils | points = 0 | |

Total for D 4

Add the points in the boxes above

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

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?**D 5.1. Does the wetland receive stormwater discharges?** Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff?

Yes = 1 No = 0

0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses ?

Yes = 1 No = 0

0

Total for D 5

Add the points in the boxes above

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

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?**D 6.1. The wetland is in a landscape that has flooding problems.**Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND | | 0 |
| Flooding occurs in sub-basin that is immediately down-gradient of wetland | points = 2 | |
| Surface flooding problems are in a sub-basin farther down-gradient | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. | points = 0 | |
| <i>Explain why</i> | | |
| ☒ There are no problems with flooding downstream of the wetland | points = 0 | |

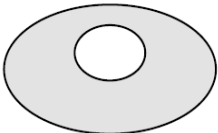
D 6.2. Has the site been identified as important for flood storage or flood conveyance

n

Wetland name or number A and B

in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i>		1
☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover ☐ Emergent plants $> 12 - 40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover ☒ Scrub-shrub (areas where shrubs have $> 30\%$ cover) ☒ Forested (areas where trees have $> 30\%$ cover)		
H 1.2. Is one of the vegetation types Aquatic Bed?		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> ☐ Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> ☒ Yes = 3 No = 0		3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft^2 . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>12</u> Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		2
H 1.4. <u>Interspersion of habitats</u> 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. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		2
 None = 0 points  Low = 1 point  Moderate = 2 points    All three diagrams in this row are HIGH = 3 points		

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.		
☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
☒ Cattails or bulrushes are present within the wetland.		
☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		2
☒ Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
☐ Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		
Total for H 1		10

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> 41 % undisturbed habitat + (15 % moderate & low intensity land uses / 2) = 48.5%		
> 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	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> 89 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 94%		
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	
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		
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 Yes = 3 No = 0		
Total for H 2		6

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

H 3.0. Is the habitat provided by the site valuable to society?	
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.	
Site meets ANY of the following criteria:	points = 2
☐ It has 3 or more priority habitats within 100 m (see Appendix B)	
☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	
☐ It is mapped as a location for an individual WDFW species	1
☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
☐ 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	

Wetland name or number A and B

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

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>		
SC 1.0. Vernal Pools Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to SC 1.1 ☒ No = Not vernal pool		
SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to SC 1.2 ☐ No = Not a vernal pool with special characteristics		
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? ☐ Yes = Category II ☐ No = Category III		
SC 2.0. Alkali wetlands Does the wetland meet one of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 ☐ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. ☐ Yes = Category I ☒ No = Not an alkali wetland		
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☒ Yes - Go to SC 3.2 ☐ No - Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☒ No = Not WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - Contact WNHP/WDNR and to SC 3.4 ☒ No = Not WHCV 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? ☐ Yes = Category I ☒ No = Not WHCV		

SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>		
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>	
	☐ Yes - Go to SC 4.3 ☒ No - Go to SC 4.2	
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?	
	☐ Yes - Go to SC 4.3 ☒ No = Is not a bog for rating	
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?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.5	
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?	
	☐ Yes = Is a Calcareous Fen for purpose of rating ☐ No - Go to SC 4.6	
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:	
	☐ Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	
	☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland	
	☐ Yes = Is a Category I calcareous fen ☐ No = Is not a calcareous fen	
SC 5.0. Forested Wetlands <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>		
	☒ The wetland is within the 100 year floodplain of a river or stream	
	☐ Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
	☐ 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)	
	☒ Yes - Go to SC 5.1 ☐ No = Not a forested wetland with special characteristics	
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)?	
	☐ Yes = Category I ☒ No - Go to SC 5.2	
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?	
	☐ Yes = Category I ☒ No - Go to SC 5.3	
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)?	
	☐ Yes = Category II ☒ No - Go to SC 5.4	
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
	☐ Yes = Category II ☒ No = Not a forested wetland with special characteristics	Cat. II

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☐ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah:** All juniper woodlands.

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland E Date of site visit: 8/5/2020Rated by Adam Crispin Trained by Ecology? ☒ Yes ☐ No Date of training 11/13/2019HGM 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 Earth**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	H	M	
Landscape Potential	M	M	H	
Value	H	L	H	Total
Score Based on Ratings	7	6	8	21

**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	

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	x
Map of the contributing basin	D 5.3	x
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	x
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	x

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	

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.

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:

Wetland has multiple classes but is overall Depressional.

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0. Does the site have the potential to improve water quality?****D 1.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 5 | 3 |
| ☐ Wetland has an intermittently flowing outlet | points = 3 | |
| ☒ Wetland has a highly constricted permanently flowing outlet | points = 3 | |
| Wetland has a permanently flowing, unconstricted, surface outlet | points = 1 | |

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)

Yes = 3 No = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- | | | |
|--|------------|---|
| Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area | points = 5 | 5 |
| Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area | points = 3 | |
| Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area | points = 1 | |
| Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area | points = 0 | |

D 1.4. Characteristics of seasonal ponding or inundation:*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- | | | |
|---|------------|---|
| Area seasonally ponded is $> \frac{1}{2}$ total area of wetland | points = 3 | 3 |
| Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland | points = 1 | |
| Area seasonally ponded is $< \frac{1}{4}$ total area of wetland | points = 0 | |

Total for D 1

Add the points in the boxes above

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

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

1

D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

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?

Source Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

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

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

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?

Yes = 1 No = 0

0

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]?

Yes = 1 No = 0

1

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)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

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

Record the rating on the first page

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 8 | 4 |
| ☐ Wetland has an intermittently flowing outlet | points = 4 | |
| ☒ Wetland has a highly constricted permanently flowing outlet | points = 4 | |
| Wetland has a permanently flowing unconstricted surface outlet | points = 0 | |
| <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i> | | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- | | | |
|---|------------|---|
| Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 8 | 8 |
| Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 6 | |
| ☐ The wetland is a headwater wetland | points = 4 | |
| ☐ Seasonal ponding: 1 ft - < 2 ft | points = 4 | |
| Seasonal ponding: 6 in - < 1 ft | points = 2 | |
| Seasonal ponding: < 6 in or wetland has only saturated soils | points = 0 | |

Total for D 4

Add the points in the boxes above

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

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff? Yes = 1 No = 0 0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0 0

Total for D 5

Add the points in the boxes above

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

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?**D 6.1. The wetland is in a landscape that has flooding problems.**Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND | | 0 |
| Flooding occurs in sub-basin that is immediately down-gradient of wetland | points = 2 | |
| Surface flooding problems are in a sub-basin farther down-gradient | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. | points = 0 | |
| <i>Explain why</i> | | |
| ☒ There are no problems with flooding downstream of the wetland | points = 0 | |

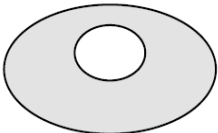
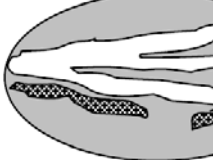
D 6.2. Has the site been identified as important for flood storage or flood conveyance

n

Wetland name or number E

in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i>		1
☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover ☐ Emergent plants $> 12 - 40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover ☒ Scrub-shrub (areas where shrubs have $> 30\%$ cover) ☒ Forested (areas where trees have $> 30\%$ cover) 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0		
H 1.2. Is one of the vegetation types Aquatic Bed?		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> ☒ Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> ☐ Yes = 3 No = 0		3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>15</u> Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		2
H 1.4. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		3
 None = 0 points  Low = 1 point  Moderate = 2 points    All three diagrams in this row are HIGH = 3 points		

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.		
☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
☒ Cattails or bulrushes are present within the wetland.		
☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		3
☒ Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
☒ Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		
Total for H 1		12

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 15 % undisturbed habitat + (12 % moderate & low intensity land uses / 2) = 21%		
> 1/3 (33.3%) of 1 km Polygon	points = 3	2
20 - 33% of 1 km Polygon	points = 2	
10 - 19% of 1 km Polygon	points = 1	
< 10 % of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 89 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 94%		
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	
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		
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		
Yes = 3	No = 0	0
Total for H 2		5

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

H 3.0. Is the habitat provided by the site valuable to society?	
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.	
Site meets ANY of the following criteria:	points = 2
☐ It has 3 or more priority habitats within 100 m (see Appendix B)	
☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	
☐ It is mapped as a location for an individual WDFW species	1
☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
☐ 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	

Wetland name or number E

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*

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>	
SC 1.0. Vernal Pools Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to SC 1.1 ☒ No = Not vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to SC 1.2 ☐ No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? ☐ Yes = Category II ☐ No = Category III	
SC 2.0. Alkali wetlands Does the wetland meet one of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 ☐ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. ☐ Yes = Category I ☒ No = Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☒ Yes - Go to SC 3.2 ☐ No - Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☒ No = Not WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - Contact WNHP/WDNR and to SC 3.4 ☒ No = Not WHCV 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? ☐ Yes = Category I ☒ No = Not WHCV	

SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>		
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>	
	☐ Yes - Go to SC 4.3 ☒ No - Go to SC 4.2	
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?	
	☐ Yes - Go to SC 4.3 ☒ No = Is not a bog for rating	
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?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.5	
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?	
	☐ Yes = Is a Calcareous Fen for purpose of rating ☐ No - Go to SC 4.6	
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:	
	☐ Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	
	☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland	
	☐ Yes = Is a Category I calcareous fen ☐ No = Is not a calcareous fen	
SC 5.0. Forested Wetlands <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>		
	☒ The wetland is within the 100 year floodplain of a river or stream	
	☐ Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
	☐ 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)	
	☒ Yes - Go to SC 5.1 ☐ No = Not a forested wetland with special characteristics	
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)?	
	☐ Yes = Category I ☒ No - Go to SC 5.2	
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?	
	☐ Yes = Category I ☒ No - Go to SC 5.3	
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)?	
	☐ Yes = Category II ☒ No - Go to SC 5.4	
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
	☐ Yes = Category II ☒ No = Not a forested wetland with special characteristics	Cat. II

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☐ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah:** All juniper woodlands.

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland D Date of site visit: 8/5/2020Rated by Adam Crispin Trained by Ecology? ☒ Yes ☐ No Date of training Nov-19HGM Class used for rating Riverine 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: ArcGIS online**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	M	
Landscape Potential	M	M	H	
Value	H	L	H	Total
Score Based on Ratings	6	5	8	19

**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	

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	

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.

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:

RIVERINE WETLANDSPoints (only 1
score per box)**Water Quality Functions** - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?

R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:

Depressions cover $> \frac{1}{3}$ area of wetland	points = 6	6
Depressions cover $> \frac{1}{10}$ area of wetland	points = 3	
Depressions present but cover $< \frac{1}{10}$ area of wetland	points = 1	
No depressions present	points = 0	

R 1.2. Structure of plants in the wetland (areas with $> 90\%$ cover at person height; **not** Cowardin classes):

Forest or shrub $> \frac{2}{3}$ the area of the wetland	points = 10	5
☐ Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland	points = 5	
☒ Ungrazed, herbaceous plants $> \frac{2}{3}$ area of wetland	points = 5	
Ungrazed herbaceous plants $\frac{1}{3} - \frac{2}{3}$ area of wetland	points = 2	
Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland	points = 0	

Total for R 1

Add the points in the boxes above

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

Record the rating on the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?

R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0 0

R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0 0

R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0 1

R 2.4. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0 0R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1 - R 2.4?
Sources Yes = 1 No = 0 0

Total for R 2

Add the points in the boxes above

1**Rating of Landscape Potential** If score is: ☐ 3 - 6 = H ☒ 1 or 2 = M ☐ 0 = L

Record the rating on the first page

R 3.0. Is the water quality improvement provided by the site valuable to society?

R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0 0

R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0 1

R 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 in which the unit is found). Yes = 2 No = 0 2

Total for R 3

Add the points in the boxes above

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

Record the rating on the first page

RIVERINE WETLANDSPoints (only 1
score per box)**Hydrologic Functions** - 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:

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).

If the ratio is more than 2	points = 10	4
If the ratio is 1 - 2	points = 8	
If the ratio is $\frac{1}{2}$ - < 1	points = 4	
If the ratio is $\frac{1}{4}$ - < $\frac{1}{2}$	points = 2	
If the ratio is < $\frac{1}{4}$	points = 1	

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 > 90% cover at person height. These are NOT Cowardin classes).*

Forest or shrub for more than $\frac{2}{3}$ the area of the wetland	points = 6	4
Forest or shrub for > $\frac{1}{3}$ area OR emergent plants > $\frac{2}{3}$ area	points = 4	
Forest or shrub for > $\frac{1}{10}$ area OR emergent plants > $\frac{1}{3}$ area	points = 2	
Plants do not meet above criteria	points = 0	

Total for R 4

Add the points in the boxes above

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

Total for R 5

Add the points in the boxes above

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

Choose the description that best fits the site.

The sub-basin immediately down-gradient of the site has flooding problems that result in damage to human or natural resources	points = 2	0
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

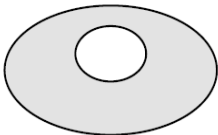
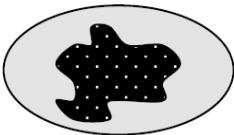
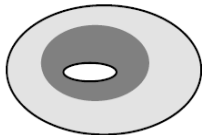
0

Total for R 6

Add the points in the boxes above

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

Record the rating on the first page

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i>		3
☒ Aquatic bed ☒ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover ☒ Emergent plants $> 12 - 40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover ☒ Scrub-shrub (areas where shrubs have $> 30\%$ cover) ☒ Forested (areas where trees have $> 30\%$ cover)		
4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0		
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0		
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> ☐ Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> ☒ Yes = 3 No = 0		
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u> 9 </u> Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		
H 1.4. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		2
   		
None = 0 points Low = 1 point Moderate = 2 points		
All three diagrams in this row are HIGH = 3 points   		

Wetland name or number D

Site does not meet any of the criteria above	points = 0
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Rating of Value If Score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Vernal Pools Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to SC 1.1 ☐ No = Not vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to SC 1.2 ☐ No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? ☐ Yes = Category II ☐ No = Category III	
SC 2.0. Alkali wetlands Does the wetland meet one of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 ☐ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. ☐ Yes = Category I ☐ No = Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to SC 3.2 ☐ No - Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☐ No = Not WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - Contact WNHP/WDNR and to SC 3.4 ☐ No = Not WHCV 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? ☐ Yes = Category I ☐ No = Not WHCV	

SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i> SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> ☐ Yes - Go to SC 4.3 ☐ No - Go to SC 4.2 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? ☐ Yes - Go to SC 4.3 ☐ No = Is not a bog for rating 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? ☐ Yes = Category I bog ☐ No - Go to SC 4.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog. SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? ☐ Yes = Category I bog ☐ No - Go to SC 4.5 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? ☐ Yes = Is a Calcareous Fen for purpose of rating ☐ No - Go to SC 4.6 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: ☐ Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems ☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland ☐ Yes = Is a Category I calcareous fen ☐ No = Is not a calcareous fen	
SC 5.0. Forested Wetlands <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> ☐ The wetland is within the 100 year floodplain of a river or stream ☐ Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species ☐ 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) ☐ Yes - Go to SC 5.1 ☐ No = Not a forested wetland with special characteristics 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)? ☐ Yes = Category I ☐ No - Go to SC 5.2 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? ☐ Yes = Category I ☐ No - Go to SC 5.3 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)? ☐ Yes = Category II ☐ No - Go to SC 5.4 SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? ☐ Yes = Category II ☐ No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	

Wetland name or number D

Choose the highest rating if wetland falls into several categories

If you answered No for all types, enter "Not Applicable" on Summary Form

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Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☒ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☐ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland F Date of site visit: 8/5/2020Rated by Adam Crispin Trained by Ecology? ☒ Yes ☐ No Date of training 11/13/2019HGM Class used for rating Depressional Wetland has multiple HGM classes? ☒ Yes ☐ NoNOTE: Form is not complete with out the figures requested (*figures can be combined*).Source of base aerial photo/map: Google EarthOVERALL WETLAND CATEGORY III (based on functions ☒ or special characteristics ☒)

1. Category of wetland based on FUNCTIONS

 Category I - Total score = 22 - 27
 Category II - Total score = 19 - 21
 X 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	L	L	
Landscape Potential	M	M	H	
Value	H	L	M	Total
Score Based on Ratings	7	5	6	18

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	

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	x
Map of the contributing basin	D 5.3	x
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	x
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	x

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	

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.

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:

Wetland has multiple classes but is overall Depressional.

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0. Does the site have the potential to improve water quality?****D 1.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|--|------------|---|
| Wetland has no surface water outlet | points = 5 | 3 |
| ☒ Wetland has an intermittently flowing outlet | points = 3 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 3 | |
| Wetland has a permanently flowing, unconstricted, surface outlet | points = 1 | |

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)

Yes = 3 No = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- | | | |
|--|------------|---|
| Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area | points = 5 | 5 |
| Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area | points = 3 | |
| Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area | points = 1 | |
| Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area | points = 0 | |

D 1.4. Characteristics of seasonal ponding or inundation:*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- | | | |
|---|------------|---|
| Area seasonally ponded is $> \frac{1}{2}$ total area of wetland | points = 3 | 1 |
| Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland | points = 1 | |
| Area seasonally ponded is $< \frac{1}{4}$ total area of wetland | points = 0 | |

Total for D 1

Add the points in the boxes above

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

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

1

D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

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?

Source Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

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

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

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?

Yes = 1 No = 0

0

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]?

Yes = 1 No = 0

1

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)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

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

Record the rating on the first page

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 8 | 4 |
| ☐ Wetland has an intermittently flowing outlet | points = 4 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 4 | |
| Wetland has a permanently flowing unconstricted surface outlet | points = 0 | |
| <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i> | | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- | | | |
|---|------------|---|
| Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 8 | 0 |
| Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 6 | |
| ☐ The wetland is a headwater wetland | points = 4 | |
| ☐ Seasonal ponding: 1 ft - < 2 ft | points = 4 | |
| Seasonal ponding: 6 in - < 1 ft | points = 2 | |
| Seasonal ponding: < 6 in or wetland has only saturated soils | points = 0 | |

Total for D 4

Add the points in the boxes above

4

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

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff? Yes = 1 No = 0 0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0 0

Total for D 5

Add the points in the boxes above

1

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

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?**D 6.1. The wetland is in a landscape that has flooding problems.**Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND | | 0 |
| Flooding occurs in sub-basin that is immediately down-gradient of wetland | points = 2 | |
| Surface flooding problems are in a sub-basin farther down-gradient | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. | points = 0 | |
| <i>Explain why</i> | | |
| ☒ There are no problems with flooding downstream of the wetland | points = 0 | |

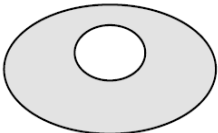
D 6.2. Has the site been identified as important for flood storage or flood conveyance

n

Wetland name or number F

in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i>		1
☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover ☐ Emergent plants $> 12 - 40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover ☒ Scrub-shrub (areas where shrubs have $> 30\%$ cover) ☒ Forested (areas where trees have $> 30\%$ cover)		
H 1.2. Is one of the vegetation types Aquatic Bed?		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> ☐ Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> ☐ Yes = 3 No = 0		0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>5</u> Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		1
H 1.4. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		0
 None = 0 points  Low = 1 point  Moderate = 2 points    All three diagrams in this row are HIGH = 3 points		

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.			
☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☐ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ☒ Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)	1		
Total for H 1		Add the points in the boxes above	3

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 41 % undisturbed habitat + (15 % moderate & low intensity land uses / 2) = 48.5%		
> 1/3 (33.3%) of 1 km Polygon 20 - 33% of 1 km Polygon 10 - 19% of 1 km Polygon < 10 % of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	3
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 89 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 94%		
Undisturbed habitat > 50% of Polygon Undisturbed habitat 10 - 50% and in 1 - 3 patches Undisturbed habitat 10 - 50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	3
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use Does not meet criterion above		
	points = (-2) points = 0	0
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		
Yes = 3 No = 0		0
Total for H 2		Add the points in the boxes above
		6

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

H 3.0. Is the habitat provided by the site valuable to society?	
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.	
Site meets ANY of the following criteria: ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan	points = 2 1

Wetland name or number F

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

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>		
SC 1.0. Vernal Pools Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to SC 1.1 ☒ No = Not vernal pool		
SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to SC 1.2 ☐ No = Not a vernal pool with special characteristics		
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? ☐ Yes = Category II ☐ No = Category III		
SC 2.0. Alkali wetlands Does the wetland meet one of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 ☐ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. ☐ Yes = Category I ☒ No = Not an alkali wetland		
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☒ Yes - Go to SC 3.2 ☐ No - Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☒ No = Not WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - Contact WNHP/WDNR and to SC 3.4 ☒ No = Not WHCV 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? ☐ Yes = Category I ☒ No = Not WHCV		

SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>		
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>	
	☐ Yes - Go to SC 4.3 ☒ No - Go to SC 4.2	
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?	
	☐ Yes - Go to SC 4.3 ☒ No = Is not a bog for rating	
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?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.5	
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?	
	☐ Yes = Is a Calcareous Fen for purpose of rating ☐ No - Go to SC 4.6	
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:	
	☐ Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	
	☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland	
	☐ Yes = Is a Category I calcareous fen ☐ No = Is not a calcareous fen	
SC 5.0. Forested Wetlands <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>		
	☒ The wetland is within the 100 year floodplain of a river or stream	
	☐ Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
	☐ 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)	
	☒ Yes - Go to SC 5.1 ☐ No = Not a forested wetland with special characteristics	
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)?	
	☐ Yes = Category I ☒ No - Go to SC 5.2	
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?	
	☐ Yes = Category I ☒ No - Go to SC 5.3	
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)?	
	☐ Yes = Category II ☒ No - Go to SC 5.4	
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
	☐ Yes = Category II ☒ No = Not a forested wetland with special characteristics	Cat. II

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☐ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah:** All juniper woodlands.

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland G Date of site visit: 8/5/2020Rated by Adam Crispin Trained by Ecology? ☒ Yes ☐ No Date of training 11/13/2019HGM 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 Earth**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	M	
Landscape Potential	M	M	H	
Value	H	L	M	Total
Score Based on Ratings	7	5	7	19

**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	

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	x
Map of the contributing basin	D 5.3	x
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	x
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	x

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	

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.

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:

Wetland has multiple classes but is overall Depressional.

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0. Does the site have the potential to improve water quality?****D 1.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|--|------------|---|
| Wetland has no surface water outlet | points = 5 | 3 |
| ☒ Wetland has an intermittently flowing outlet | points = 3 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 3 | |
| Wetland has a permanently flowing, unconstricted, surface outlet | points = 1 | |

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)

Yes = 3 No = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- | | | |
|--|------------|---|
| Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area | points = 5 | 5 |
| Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area | points = 3 | |
| Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area | points = 1 | |
| Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area | points = 0 | |

D 1.4. Characteristics of seasonal ponding or inundation:*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- | | | |
|---|------------|---|
| Area seasonally ponded is $> \frac{1}{2}$ total area of wetland | points = 3 | 1 |
| Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland | points = 1 | |
| Area seasonally ponded is $< \frac{1}{4}$ total area of wetland | points = 0 | |

Total for D 1

Add the points in the boxes above

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

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?**D 2.1. Does the wetland receive stormwater discharges?** Yes = 1 No = 0

1

D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

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?

Source Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

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

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?**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?**

Yes = 1 No = 0

0

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]?

Yes = 1 No = 0

1

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)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

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

Record the rating on the first page

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 8 | 4 |
| ☒ Wetland has an intermittently flowing outlet | points = 4 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 4 | |
| Wetland has a permanently flowing unconstricted surface outlet | points = 0 | |
| <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i> | | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- | | | |
|---|------------|---|
| Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 8 | 6 |
| Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 6 | |
| ☐ The wetland is a headwater wetland | points = 4 | |
| ☐ Seasonal ponding: 1 ft - < 2 ft | points = 4 | |
| Seasonal ponding: 6 in - < 1 ft | points = 2 | |
| Seasonal ponding: < 6 in or wetland has only saturated soils | points = 0 | |

Total for D 4

Add the points in the boxes above

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

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff? Yes = 1 No = 0 0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0 0

Total for D 5

Add the points in the boxes above

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

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?**D 6.1. The wetland is in a landscape that has flooding problems.**Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND | | 0 |
| Flooding occurs in sub-basin that is immediately down-gradient of wetland | points = 2 | |
| Surface flooding problems are in a sub-basin farther down-gradient | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. | points = 0 | |
| <i>Explain why</i> | | |
| ☒ There are no problems with flooding downstream of the wetland | points = 0 | |

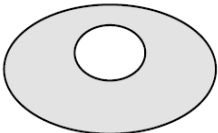
D 6.2. Has the site been identified as important for flood storage or flood conveyance

n

Wetland name or number G

in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i>		3
☐ Aquatic bed ☒ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover ☐ Emergent plants $> 12 - 40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover ☒ Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover ☒ Scrub-shrub (areas where shrubs have $> 30\%$ cover) ☒ Forested (areas where trees have $> 30\%$ cover)		
H 1.2. Is one of the vegetation types Aquatic Bed?		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> ☐ Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> ☐ Yes = 3 No = 0		0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>12</u> Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		2
H 1.4. <u>Interspersion of habitats</u> 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. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		3
 None = 0 points  Low = 1 point  Moderate = 2 points    All three diagrams in this row are HIGH = 3 points		

Wetland name or number G

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*

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>		
SC 1.0. Vernal Pools Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to SC 1.1 ☒ No = Not vernal pool		
SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes - Go to SC 1.2 ☐ No = Not a vernal pool with special characteristics		
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? ☐ Yes = Category II ☐ No = Category III		
SC 2.0. Alkali wetlands Does the wetland meet one of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 ☐ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. ☐ Yes = Category I ☒ No = Not an alkali wetland		
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☒ Yes - Go to SC 3.2 ☐ No - Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☒ No = Not WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - Contact WNHP/WDNR and to SC 3.4 ☒ No = Not WHCV 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? ☐ Yes = Category I ☒ No = Not WHCV		

SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>		
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>	
	☐ Yes - Go to SC 4.3 ☒ No - Go to SC 4.2	
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?	
	☐ Yes - Go to SC 4.3 ☒ No = Is not a bog for rating	
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?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.5	
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?	
	☐ Yes = Is a Calcareous Fen for purpose of rating ☐ No - Go to SC 4.6	
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:	
	☐ Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	
	☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland	
	☐ Yes = Is a Category I calcareous fen ☐ No = Is not a calcareous fen	
SC 5.0. Forested Wetlands <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>		
	☒ The wetland is within the 100 year floodplain of a river or stream	
	☐ Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
	☐ 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)	
	☒ Yes - Go to SC 5.1 ☐ No = Not a forested wetland with special characteristics	
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)?	
	☐ Yes = Category I ☒ No - Go to SC 5.2	
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?	
	☐ Yes = Category I ☒ No - Go to SC 5.3	
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)?	
	☐ Yes = Category II ☒ No - Go to SC 5.4	
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
	☐ Yes = Category II ☒ No = Not a forested wetland with special characteristics	Cat. II

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☐ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah:** All juniper woodlands.

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland H Date of site visit: 8/5/2020Rated by Adam Crispin Trained by Ecology? ☒ Yes ☐ No Date of training 11/13/2019HGM 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 Earth**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☒)

1. Category of wetland based on FUNCTIONS

 Category I - Total score = 22 - 27
 Category II - Total score = 19 - 21
 X 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	L	M	
Landscape Potential	L	L	H	
Value	H	L	M	Total
Score Based on Ratings	6	3	7	16

**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	

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	x
Map of the contributing basin	D 5.3	x
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	x
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	x

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	

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.

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:

Wetland has multiple classes but is overall Depressional.

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0. Does the site have the potential to improve water quality?****D 1.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 5 | 3 |
| ☐ Wetland has an intermittently flowing outlet | points = 3 | |
| ☒ Wetland has a highly constricted permanently flowing outlet | points = 3 | |
| Wetland has a permanently flowing, unconstricted, surface outlet | points = 1 | |

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)

Yes = 3 No = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- | | | |
|--|------------|---|
| Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area | points = 5 | 3 |
| Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area | points = 3 | |
| Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area | points = 1 | |
| Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area | points = 0 | |

D 1.4. Characteristics of seasonal ponding or inundation:*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- | | | |
|---|------------|---|
| Area seasonally ponded is $> \frac{1}{2}$ total area of wetland | points = 3 | 0 |
| Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland | points = 1 | |
| Area seasonally ponded is $< \frac{1}{4}$ total area of wetland | points = 0 | |

Total for D 1

Add the points in the boxes above

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

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

0

D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

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?

Source Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

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

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

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?

Yes = 1 No = 0

0

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]?

Yes = 1 No = 0

1

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)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

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

Record the rating on the first page

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 8 | 4 |
| ☒ Wetland has an intermittently flowing outlet | points = 4 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 4 | |
| Wetland has a permanently flowing unconstricted surface outlet | points = 0 | |
| <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i> | | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- | | | |
|---|------------|---|
| Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 8 | 0 |
| Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 6 | |
| ☐ The wetland is a headwater wetland | points = 4 | |
| ☐ Seasonal ponding: 1 ft - < 2 ft | points = 4 | |
| Seasonal ponding: 6 in - < 1 ft | points = 2 | |
| Seasonal ponding: < 6 in or wetland has only saturated soils | points = 0 | |

Total for D 4

Add the points in the boxes above

4

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

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 0

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff? Yes = 1 No = 0 0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0 0

Total for D 5

Add the points in the boxes above

0

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

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?**D 6.1. The wetland is in a landscape that has flooding problems.**Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND | | 0 |
| Flooding occurs in sub-basin that is immediately down-gradient of wetland | points = 2 | |
| Surface flooding problems are in a sub-basin farther down-gradient | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. | points = 0 | |
| <i>Explain why</i> | | |
| ☒ There are no problems with flooding downstream of the wetland | points = 0 | |

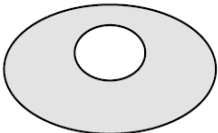
D 6.2. Has the site been identified as important for flood storage or flood conveyance

n

Wetland name or number H

in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i>		2
☐ Aquatic bed ☒ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover ☐ Emergent plants $> 12 - 40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover ☒ Scrub-shrub (areas where shrubs have $> 30\%$ cover) ☒ Forested (areas where trees have $> 30\%$ cover)		
H 1.2. Is one of the vegetation types Aquatic Bed?		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> ☐ Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> ☒ Yes = 3 No = 0		0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>5</u> Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		1
H 1.4. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		2
 None = 0 points  Low = 1 point  Moderate = 2 points    All three diagrams in this row are HIGH = 3 points		

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.		
☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
☒ Cattails or bulrushes are present within the wetland.		
☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		2
☒ Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
☐ Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		
Total for H 1		7

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 12 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 22%		
> 1/3 (33.3%) of 1 km Polygon	points = 3	2
20 - 33% of 1 km Polygon	points = 2	
10 - 19% of 1 km Polygon	points = 1	
< 10 % of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 89 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 94%		
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	
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		
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		
Yes = 3	No = 0	0
Total for H 2		5

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

H 3.0. Is the habitat provided by the site valuable to society?	
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.	
Site meets ANY of the following criteria:	points = 2
☐ It has 3 or more priority habitats within 100 m (see Appendix B)	
☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	
☐ It is mapped as a location for an individual WDFW species	1
☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
☐ 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	

Wetland name or number H

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*

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>		
SC 1.0. Vernal Pools Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to SC 1.1 ☒ No = Not vernal pool		
SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to SC 1.2 ☐ No = Not a vernal pool with special characteristics		
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? ☐ Yes = Category II ☐ No = Category III		
SC 2.0. Alkali wetlands Does the wetland meet one of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 ☐ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. ☐ Yes = Category I ☒ No = Not an alkali wetland		
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☒ Yes - Go to SC 3.2 ☐ No - Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☒ No = Not WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - Contact WNHP/WDNR and to SC 3.4 ☒ No = Not WHCV 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? ☐ Yes = Category I ☒ No = Not WHCV		

SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>		
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>	
	☐ Yes - Go to SC 4.3 ☒ No - Go to SC 4.2	
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?	
	☐ Yes - Go to SC 4.3 ☒ No = Is not a bog for rating	
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?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.4	
	NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	
	☐ Yes = Category I bog ☐ No - Go to SC 4.5	
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?	
	☐ Yes = Is a Calcareous Fen for purpose of rating ☐ No - Go to SC 4.6	
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:	
	☐ Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	
	☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland	
	☐ Yes = Is a Category I calcareous fen ☐ No = Is not a calcareous fen	
SC 5.0. Forested Wetlands <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>		
	☒ The wetland is within the 100 year floodplain of a river or stream	
	☐ Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
	☐ 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)	
	☒ Yes - Go to SC 5.1 ☐ No = Not a forested wetland with special characteristics	
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)?	
	☐ Yes = Category I ☒ No - Go to SC 5.2	
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?	
	☐ Yes = Category I ☒ No - Go to SC 5.3	
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)?	
	☐ Yes = Category II ☒ No - Go to SC 5.4	
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
	☐ Yes = Category II ☒ No = Not a forested wetland with special characteristics	Cat. II

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☐ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah:** All juniper woodlands.

WETLAND ASSESSMENT REPORT

Wetland Delineation Nason Creek Floodplain Repeat Winton, Chelan County, WA

Yakama Nation Upper Columbia
Habitat Restoration Project

Prepared by



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Table of Contents

Executive Summary	v
Chapter 1. Introduction.....	1
1.1 Scope and Purpose	1
1.2 Project Location.....	1
Chapter 2. Methods.....	2
2.1 Wetland Identification, Delineation, and Classification.....	2
2.2 Wetlands and Waters of the State Definitions and Regulatory Requirements	2
Chapter 3. Existing Conditions	5
3.1 Landscape Setting	5
3.2 Previously Mapped Wetlands and Streams.....	5
3.3 Wetlands	7
3.3.1 Wetland A.....	8
3.3.2 Uplands	10
References	12

Figures

Figure 1. Project location in red (Google Maps 2021).....	1
Figure 2. NWI-mapped wetlands.....	6
Figure 3. Wetland A within the boundaries of the Study area.	7
Figure 4. Stream Channel found within the boundaries of Wetland A.	9
Figure 5. Ponded Areas within Wetland A.	10
Figure 6. Overview of upland areas.....	11

Tables

Table 1. Wetlands within the Project Area.....	7
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Appendices

Appendix A — Existing Conditions Map
Appendix B — Data Sheets
Appendix C — Rating Forms

Limitations

This report is based upon information collected in the field and obtained from resources provided by the Federal, State and Local Agencies. Conclusions are the professional opinion of the authors and are subject to approval by the appropriate agencies.

Executive Summary

On November 3rd, 2021, Hamer Environmental (Hamer) scientists conducted a site assessment of the study area, which consisted of 3.86 acres with the Nason Creek floodplain in Chelan County, Washington. This wetland assessment was prepared for Yakama Nation Fisheries in conjunction with the Yakama Nation Upper Columbia Habitat Restoration Project (URCHPP) under the Yakama Fisheries Resource Management Program. One wetland was delineated within the study area during the site assessment, and wetland edges were flagged. The wetland was rated according to the current Washington State Department of Ecology Wetland Rating System (Hruby 2014) and was determined to be Category III. According to County Critical Area Ordinances, a Category III wetland with low land-use intensity and moderate habitat function requires a 75-foot buffer. After reviewing historical aerial images, LiDAR, and USACE field methodologies, Hamer scientists evaluate wetland habitat function and values. This report contains descriptions of the existing conditions of the study area.

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Chapter 1. Introduction

1.1 Scope and Purpose

This Wetland Assessment Report has been prepared to meet the requirements for wetland determinations according to U.S. Army Corps of Engineers guidelines (USACE 2008). A wetland assessment was conducted for the Yakama Nation Fisheries in conjunction with the Yakama Nation Upper Columbia Habitat Restoration Project (URCHPP). This report contains project area natural resources descriptions, including wetlands and rivers. Hamer delineated one wetland onsite during the site investigation, and wetland boundaries were flagged.

Information gathered in this report assists project designers in avoiding and/or minimizing impacts to sensitive areas and species, provides information for regulatory reviewers, and provides information for mitigation reports if needed. The report is anticipated to support review by the Yakama Nation, U.S. Army Corps of Engineers (USACE), and/or the Washington State Department of Ecology (Ecology). The purpose of this document is to satisfy federal, state, and local regulations for wetland identification and delineation within the proposed project area. The project proposes implementing instream restoration on Nason Creek to improve habitat for threatened fish species.

1.2 Project Location

The project site (APE) is approximately 3.86 acres located along State Route 207 near Coles Corner in Chelan County, Washington. The site is situated in the WRIA 45 and sub-watershed Lower Nason Creek (HUC 170200110203). The legal geographic location is Section 09, Township 26 North, Range 17 East (Figure 1).

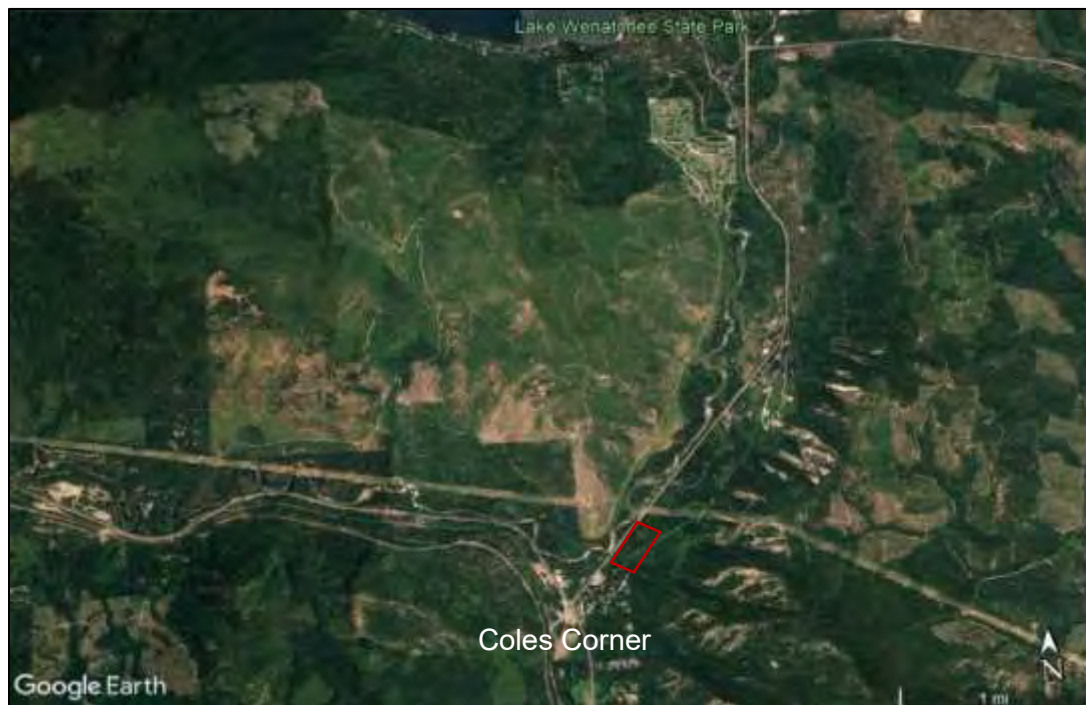


Figure 1. Project location in red (Google Maps 2021)

Chapter 2. Methods

2.1 Wetland Identification, Delineation, and Classification

Hamer scientists delineate wetlands according to local, state, and federal guidelines. Wetland resources are delineated using guidelines and methods described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) as amended with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast (Version 2.0)* (USACE 2010). Wetland boundaries are surveyed using a Trimble GEOxt GPS unit.

Delineators used several tools to identify and classify plants and soils examined within the investigated area. Plant indicator status and scientific plant names were identified using the *National Wetland Plant List: 2020 Update of Wetland Ratings* (Lichvar et al. 2014) and any updates to the *National Wetland Plant List* (USACE, 2016). Soil characteristics were recorded and classified using the *Field Book for Describing and Sampling Soils* (USDA, NRCS 2012). Hydric soil conditions were assessed using *Field Indicators of Hydric Soils in the United States, Version 8.2* (USDA, NRCS 2018).

Wetlands delineated were classified according to federal, state, and local systems. The *Classification of Wetlands and Deepwater Habitats of the United States* [Federal Geographic Data Committee (FGDC) 2013] is a descriptive classification, based on physical attributes (i.e., plant community, soils, and water regime). Wetlands perform a variety of biological, physical (hydrologic), and chemical (water quality) functions.

Chelan County defines wetland protection standards in Chapter 11.80 Wetland Overlay District (WOD), which includes guidelines for determining wetland buffers' width. The standard buffer widths are based on the category of wetland and the habitat score as determined by a qualified consultant. For this project, each wetland was assigned a hydrogeomorphic (HGM) classification to assess impacts and determine appropriate wetland restoration or mitigation (Brinson 1993). Functions and values for wetlands within the project vicinity were classified under HGM and evaluated using the Washington State Wetland Rating System for Eastern Washington (Hruby 2014). Ecology divides wetlands into four hierarchical categories based on specific attributes such as rarity, sensitivity to disturbance, and functions (Hruby 2014). The Ecology classification hierarchy ranges from Category I wetlands, which exhibit outstanding features (rare wetland type, relatively undisturbed or a high sensitivity to disturbance, and high level of functions) to Category IV wetlands, which have the lowest levels of function and are often heavily disturbed.

2.2 Wetlands and Waters of the State Definitions and Regulatory Requirements

Waters of the United States: "All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; All interstate waters including interstate wetlands; All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the

use, degradation, or destruction of which could affect interstate or foreign commerce...Wetlands adjacent to waters (other than waters that are themselves wetlands) identified above.” (Definition taken from 33 CFR, Part 328.3). “Adjacent” is defined as bordering, contiguous, or neighboring.

Wetlands: “Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” (Definition taken from 33 CFR, Part 328.3).

Limits of jurisdiction in nontidal waters:

- in the absence of adjacent wetlands, the jurisdiction extends to the ordinary high-water mark;
- when adjacent wetlands are present, the jurisdiction extends beyond the ordinary high-water mark to the limit of the adjacent wetlands;
- when the Water of the United States consists only of wetlands, the jurisdiction extends to the limit of the wetland (taken from 33 CFR, Part 328.3).

Ordinary high-water mark: “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” (U.S. Congress 1986).

Regulatory Requirements:

Wetlands/waters of the state are under the jurisdiction of the Army Corps of Engineers (Corps), state, and Yakama Tribal Code. The Corps has the authority to determine whether a wetland or stream is a water of the U.S. and thus federally regulated under Section 404 of the Clean Water Act (CWA).

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Chapter 3. Existing Conditions

3.1 Landscape Setting

The study area lies in the Nason Creek Drainage. Nason Creek is constrained by steep and rough mountains that range up to 6,000 feet in elevation. The surrounding Wenatchee National Forest has historically been logged for mid-elevation tree species such as Pacific silver fir (*Abies amabilis*), western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*) (Consulting, 2019). Snow falls between October to May and provides habitat to large mammals such as elk, bighorn sheep, and grey wolf. The study area lies south of the Lake Wenatchee State Park, where rural residencies transition into National Forest land for recreational use. In general, Nason Creek is relatively “pristine”; however, there are likely some downstream impacts due to stormwater (from impervious surfaces, old logging activities, campgrounds, and road runoff) and general residential inhabitation within the Lower Nason Creek Watershed.

3.2 Previously Mapped Wetlands and Streams

The National Wetlands Inventory (NWI) Map indicates a forested and scrub-shrub and riverine habitat within and in the Nason Creek APE's vicinity (Figure 2). Nason Creek flows from the southwest to the north relative to the project area. Nason Creek is the principal hydraulic feature to the surrounding wetlands and exhibits braided streams, divergent side channels, and the development of gravel bars (WSCC, 2000). The WDNR Natural Heritage Information System has no records of rare plants, high-quality wetlands, or ecosystems within the study area (WDNR 2020b).

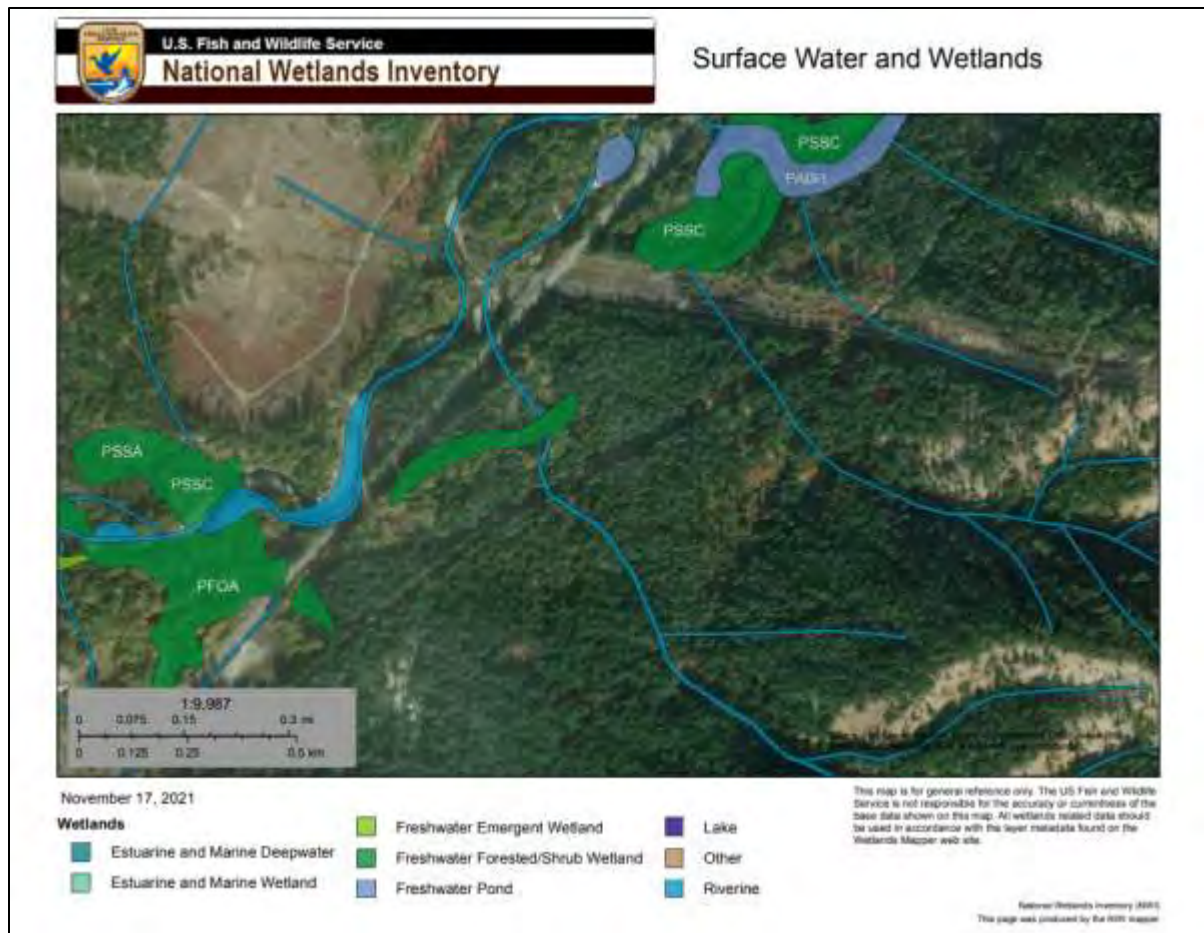


Figure 2. NWI-mapped wetlands

3.3 Wetlands

During the site assessment, Hamer scientists traversed the study area and observed one wetland onsite. Onsite wetland boundaries were delineated where indicators for hydrophytic vegetation, hydric soils, and wetland hydrology were present. Wetland determination data forms are complete with field observations from several sample plots within the study area (Figure 3). Table 1 summarizes the characteristics of the wetland.

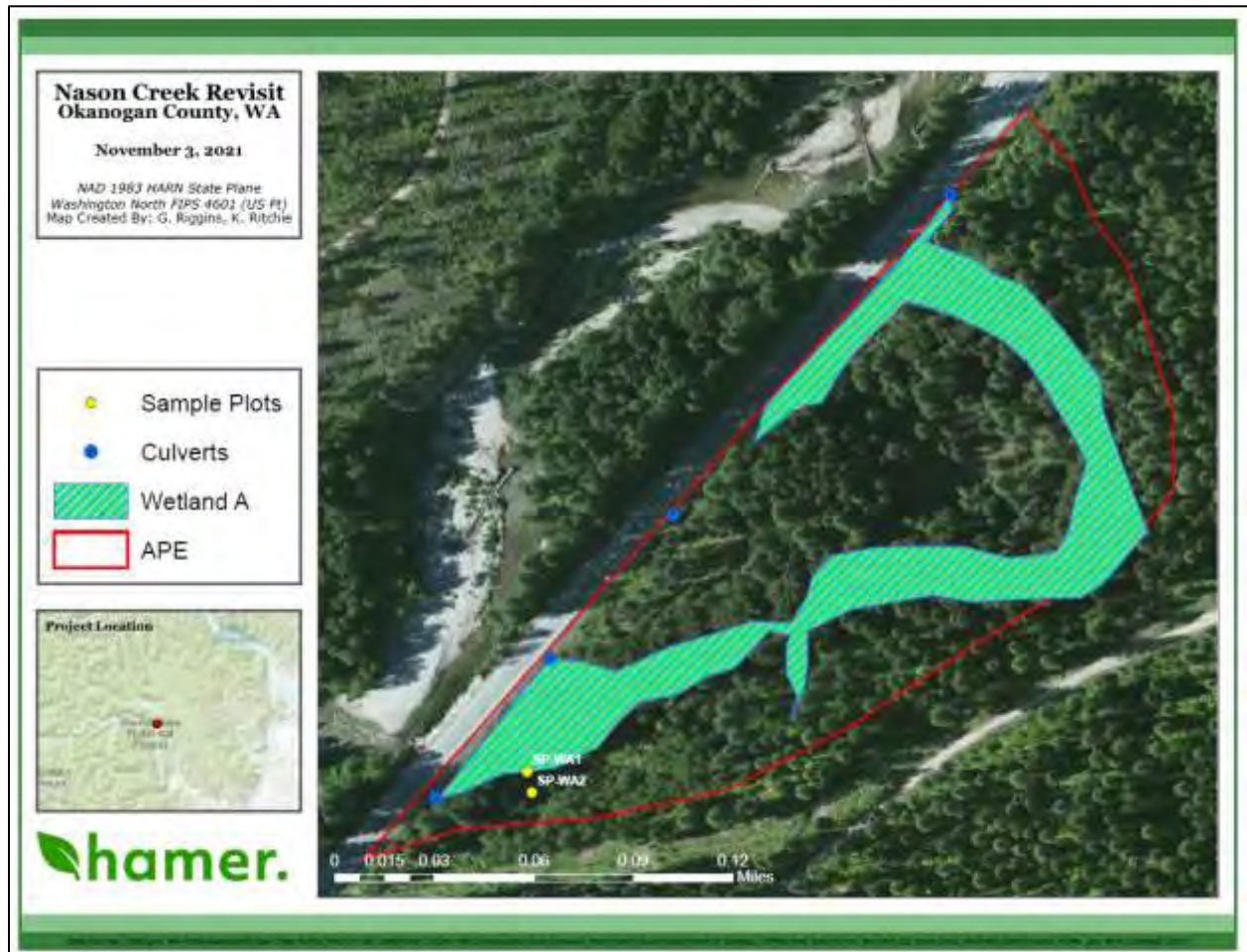


Figure 3. Wetland A within the boundaries of the Study area.

Table 1. Wetlands within the Project Area.

Wetland/ stream	Wetland Classification				Wetland Size (acres)	Wetland Buffer (ft)
	FGDC ¹	HGM	Ecology Category	Habitat Score		
Wetland A	PFO/PSS	Depressional	III	6	3.86	75

¹FGDC (formerly Cowardin) or NWI Class based on vegetation: PFO=Palustrine Forested, PSS=Palustrine Scrub-shrub, PEM=Palustrine Emergent, R2EM = Riverine, Lower Perennial, Emergent.

3.3.1 Wetland A

Wetland A is characterized as a palustrine forested and scrub/shrub (PFO/PSS) wetland in topographical depression with diverging stream beds (FGDC 2013). The wetland is confined by State Route 207; however, several culverts allow water to flow from Nason Creek into the wetland. Conditions within the wetland appear to be seasonally variable and under winter flood conditions (Figure 3, Figure 4).

Wetland conditions vary throughout the wetland. The southern half of the wetland vegetation is dominated by red-osier dogwood (*Cornus sericea*) and field horsetail (*Equisetum arvense* L.). As you transition into the northern half of the wetland, hummock islands provide habitat for Pacific silver fir (*Abies amabilis*) and douglas fir (*Pseudotsuga menziesii*) saplings. In addition, diverging streams channels interlace the wetland but appear to be abandoned side channels of Nason Creek. Along State Route 207 and in the northern half of the wetland, the dominant plant community is scrub-shrub. Douglas spiraea (*Spiraea douglasii*) and red-osier dogwood densely populate the roadside ditch and continue into the northern half of the wetland (Figure 5).

The hydric soil indicator Depleted Below Dark Surface (A11) was identified in the soil test plot in the wetland. In general, the subsurface soil layer is dark with a depleted matrix of 60% or more chroma of 2 or less, starting within 12 inches and having a minimum thickness of 6 inches. The soil sample plot observed had a soil subsurface layer with a matrix color (7.5YR 2.5/1) and a second soil layer with matrix color (10YR 2/1) with an observed thickness of 13 inches. No prominent redox concentrations were observed (Appendix B).

Hyporheic flows from Nason Creek serve as the primary source of hydrology for Wetland A; however, the wetland likely also receives hydrology from road runoff and direct precipitation. At the time of the field investigation, the site showed evidence of the following wetland hydrology indicators: Sparsely Vegetated Concave Surface (B8), Geomorphic Position (D2), and FAC-Neutral Test (D5) (Appendix B). Wetland A has areas of seasonal surface water ponding outside of the sampled plots. The water depth in ponded areas ranges from one to three feet deep during times of high precipitation and spring runoff. Stream channels vary in vegetation cover, and hydrology ranges from ephemeral flowing streams to channels that may only be partially saturated year-round (Figure 3). Conditions within the wetland appear to be seasonally variable and under winter flood conditions. Some areas may be flooded from the subsurface flows from the Nason Creek. Apart from the sample plots, surface water was observed in the northwest half of the wetland that was dominated by the scrub-shrub plant community. Wetland A is partially within the floodplain of Nason Creek and may become inundated with surface water during seasonal or occasional flooding.

Wetland A is characterized as a Depressional wetland using the HGM system. It is a Category III wetland according to the current Ecology (2014) rating system based on its functions. Wetland A provides low levels of water quality and hydrologic function with a high level of habitat function. Wetland Rating system points were assigned as follows:

Water Quality Score: 6 (Low level of function)
Hydrologic Score: 6 (Low level of function)
Habitat Score: 6 (High level of function)
Total 18

Wetland functions and values for Wetland A are detailed in Appendix C.



Figure 4. Stream Channel found within the boundaries of Wetland A.



Figure 5. Poned Areas within Wetland A.

3.3.2 Uplands

In addition to the wetland test pit, one upland sample pit (paired test pit) adjacent to the wetland was evaluated (Figure 6). Uplands are dominated by pacific silver fir, bitter cherry (*Prunus emarginata*), and black cottonwood (*Populus balsamifera spp.*). The forest understory was largely bare ground with sparse Oregon-grape (*Mahonia aquafolium*). Upland soils are generally very dark brown (10YR 3/2) to brown (10YR 4/3) silt loam (Appendix B).



Figure 6. Overview of upland areas.

References

- Brinson, M.M. 1993. *A Hydrogeomorphic Classification for Wetlands*. Technical Report WRPDE-4. US Army Engineers Waterways Experiment Station, Vicksburg, MS.
- Consulting, C. C. (2019). *Nason Ridge Community Forest Management Plan*. Retrieved from https://www.co.chelan.wa.us/files/natural-resources/documents/Nason%20Ridge%20Community%20Forest%20Management%20Plan_2019%201125.pdf
- [Ecology] Washington Department of Ecology. 2021. Washington State Department of Ecology. Water Quality Assessments/TMDLs. Accessed online at: <https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx>.
- Ecology. 2018. *Wetlands in Washington State Volume 2 – Protecting and Managing Wetlands*. Appendix 8-D: Guidance on Widths of Buffers and Ratios for Compensatory Mitigation for Use with the Eastern Washington Wetland Rating System. Ecology Publication No. 05-06-008.
- Environmental Laboratory. 1987. Corps of Engineers wetland delineation manual. Technical Report Y-87-1, Environmental Laboratory, Department of the Army, Waterways Experiment Station, Vicksburg, MI.
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- Fisheries, Y. N. (2021). *Upper Columbia Habitat Restoration Project (UCHRP)*. Retrieved from Yakama Nation Fisheries: <https://www.yakamafish-nsn.gov/restore/projects/uchrp>
- Franklin, J.F. and C.T. Dyrness. 1988. Natural vegetation of Oregon and Washington. Oregon State University Press, Corvallis, OR.
- Hruby, T. (2014). *Washington State Wetland Rating System for Eastern Washington: 2014 Update*. (Publication #14-06-030). Olympia, WA: Washington Department of Ecology.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List: 2016 wetland ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
- StreamNet. 2021. StreamNet Mapper online. Available at: <https://psmfc.maps.arcgis.com/apps/webappviewer/index.html?id=3be91b0a32a9488a901c3885bbfc2b0b>
- [USACE] U.S. Army Corps of Engineers. 2007. [Regulatory guidance letter No. 07-02.] Located at <http://www.usace.army.mil/cecw/pages/rqlsindx.aspx>.
- USACE. 2010. United States Army Corps of Engineers. Final Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valley, and Coast Region, ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-03-13. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE. 2020. United States Army Corps of Engineers. National Wetland Plant List, Version 3.3. Accessed online at: https://www.codot.gov/programs/environmental/wetlands/assets/nwpl_co2020.pdf

- USDA, NRCS. 2010. United States Department of Agriculture, Natural Resource Conservation Service, in cooperation with the National Technical Committee for Hydric Soils. Field indicators of hydric soils in the United States guide for identifying and delineating hydric soils, version 7.0. Washington, D.C.
- USDA, NRCS. 2012. United States Department of Agriculture, Natural Resource Conservation Service. Field book for describing and sampling soils, version 3.0. September 2012. Accessed online at:
http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052523.pdf.
- USDA, NRCS. 2018. United States Department of Agriculture, Soil Conservation Service in cooperation with the National Technical Committee for Hydric Soils. Hydric soils of the United States. Available online at
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>.
- USDA, NRCS. 2021. Soil survey of Project Area, Washington. U.S. Department of Agriculture, Natural Resource Conservation Service. Accessed online at:
<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- USFWS. 2021. United States Fish and Wildlife Service, National Wetlands Inventory. NWI – National wetlands inventory in Washington State. Accessed online at:
<http://www.fws.gov/wetlands/Data/Mapper.html>.
- USFWS. 2021. Endangered Species Mapper for project site. Accessed online on at:
<https://ecos.fws.gov/ipac/>.
- WDFW. 2008. Washington Department of Fish and Wildlife. Priority Habitat and Species List. Olympia, Washington. 177 pp. Accessed online at:
<http://wdfw.wa.gov/conservation/phs/list/>.
- WDFW. 2021a. Washington Department of Fish and Wildlife Priority Habitat and Species Report for site. Accessed online at: <http://apps.wdfw.wa.gov/phsontheweb/>.
- WDFW. 2021b. Washington State Department of Fish and Wildlife (WDFW) Salmonscape Maps. Accessed online at: <http://apps.wdfw.wa.gov/salmonscape/map.html#>.
- WSCC. 2000. Washington State Conservation Commission. Salmon, Steelhead and Bull Trout Habitat Limiting Factors. Water Resource Inventory Area 48 Final Report.

Appendix A — Existing Conditions Map

Nason Creek Revisit Okanogan County, WA

November 3, 2021

NAD 1983 HARN State Plane
Washington North FIPS 4601 (US Ft)
Map Created By: G. Riggins, K. Ritchie

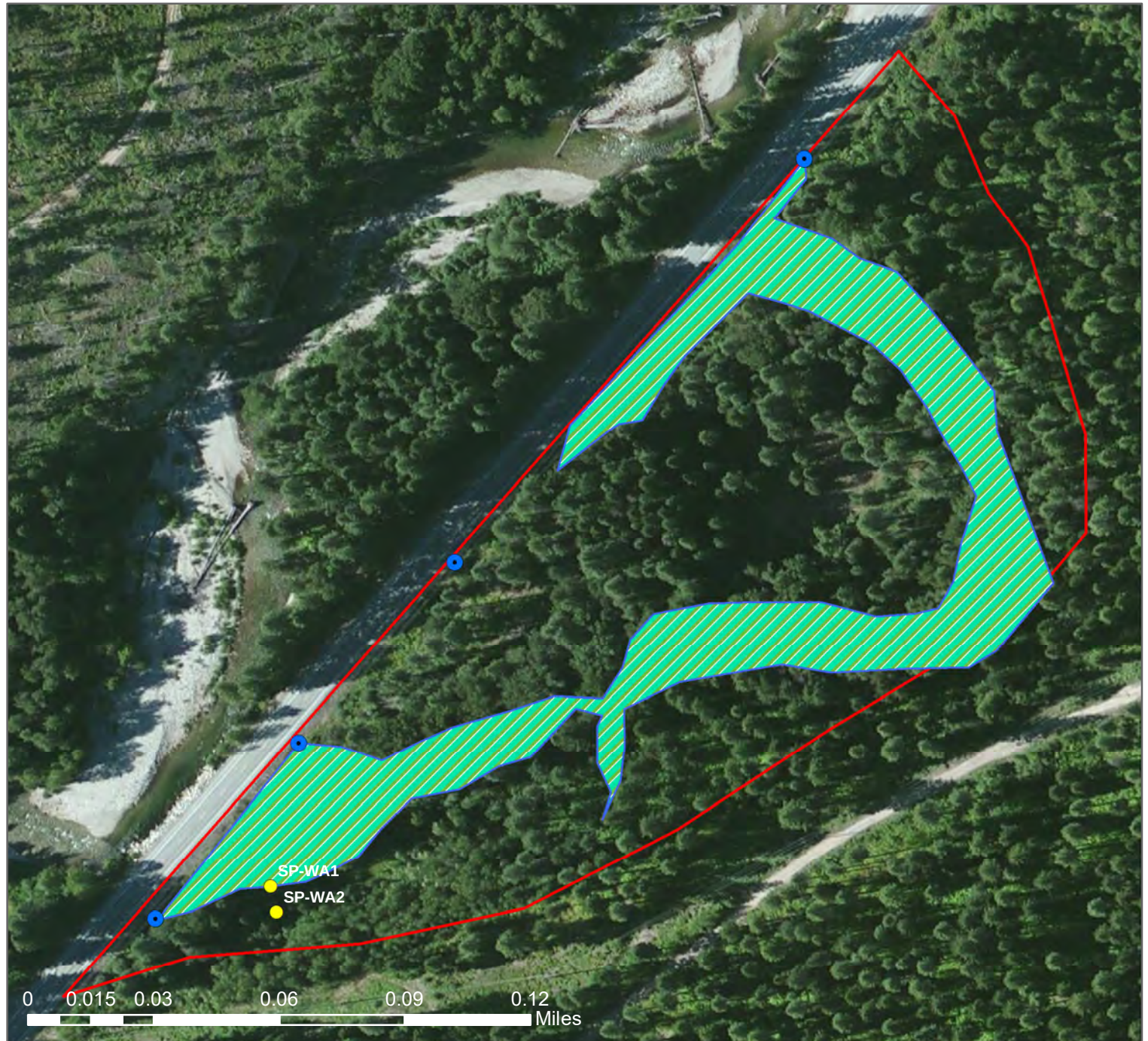
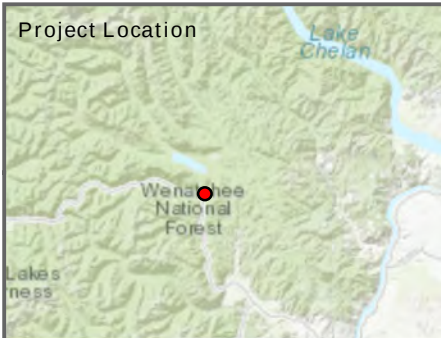
● Sample Plots

● Culverts

Wetland A

APE

Project Location



Appendix B — Data Sheets

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

Project/Site: Nason Creek revisit City/County: Chelan Sampling Date: 2021-11-03
 Applicant/Owner: Yakama fisheries State: Washington Sampling Point: SP-UP1
 Investigator(s): Adam Crispin, Meg Harrison Section, Township, Range: 09, T26N, R17E
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): A 6 Lat: 47.7605266 Long: -120.7335133 Datum: WGS 84
 Soil Map Unit Name: Wintoner silt loam, 3 to 8 percent slopes NWI classification: PSS/PEM

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Abies amabilis</u>	<u>20</u>	☒	<u>FACU</u>	
2. <u>Prunus emarginata</u>	<u>15</u>	☒	<u>FACU</u>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. <u>Populus balsamifera</u>	<u>10</u>	☒	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
4. _____				Prevalence Index worksheet:
	<u>45%</u>		= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)				Total % Cover of:
1. <u>Acer circinatum</u>	<u>60</u>	☒	<u>FAC</u>	OBL species <u>0</u> x 1 = <u>0</u>
2. <u>Mahonia aquifolium</u>	<u>10</u>		<u>FACU</u>	FACW species <u>0</u> x 2 = <u>0</u>
3. _____				FAC species <u>73</u> x 3 = <u>219</u>
4. _____				FACU species <u>45</u> x 4 = <u>180</u>
5. _____				UPL species <u>0</u> x 5 = <u>0</u>
	<u>70%</u>		= Total Cover	Column Totals: <u>118</u> (A) <u>399</u> (B)
Herb Stratum (Plot size: <u>5 ft r</u>)				Prevalence Index = B/A = <u>3.38</u>
1. <u>Equisetum arvense</u>	<u>3</u>	☒	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
Woody Vine Stratum (Plot size: <u>30 ft r</u>)				Hydrophytic Vegetation Present? Yes ☐ No ☒
1. _____				
2. _____				
% Bare Ground in Herb Stratum _____			= Total Cover	
Remarks:				

SOIL

Sampling Point: SP-UP1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 6	10YR 3/2	100					Silt Loam	
6 - 16	10YR 4/2	100					Silt Loam	
-								
-								
-								
-								
-								
-								

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

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

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

Project/Site: Nason Creek revisit City/County: Chelan Sampling Date: 2021-11-03
 Applicant/Owner: Yakama fisheries State: Washington Sampling Point: SP-WA1
 Investigator(s): Adam Crispin, Meg Harrison Section, Township, Range: 09, T26N, R17E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): A 6 Lat: 47.7605100 Long: -120.7335366 Datum: WGS 84
 Soil Map Unit Name: Wintoner silt loam, 3 to 8 percent slopes NWI classification: PSS/PEM

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Alnus rubra</u>	<u>15</u>	☒	<u>FAC</u>	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
<u>15%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)				Total % Cover of: _____ Multiply by: _____
1. <u>Cornus alba</u>	<u>60</u>	☒	<u>FACW</u>	OBL species <u>0</u> x 1 = <u>0</u>
2. <u>Acer circinatum</u>	<u>10</u>	_____	<u>FAC</u>	FACW species <u>60</u> x 2 = <u>120</u>
3. _____	_____	_____	_____	FAC species <u>65</u> x 3 = <u>195</u>
4. _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
5. _____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
<u>70%</u> = Total Cover				Column Totals: <u>125</u> (A) <u>315</u> (B)
Herb Stratum (Plot size: <u>5 ft r</u>)				Prevalence Index = B/A = <u>2.52</u>
1. <u>Equisetum arvense</u>	<u>40</u>	☒	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>40%</u> = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
Woody Vine Stratum (Plot size: <u>30 ft r</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: SP-WA1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	7.5YR 2.5/1	100						
5 - 18	10YR 2/1	100					Silt Loam	
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

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

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

Secondary Indicators (2 or more required)

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

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Surface water was present in the Northwestern area of the wetland; depth varied between .5 and 1 foot.

Appendix C — Rating Forms

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland A Date of site visit: 11/2/2021

Rated by Adam Crispin Trained by Ecology? ☒ Yes ☐ No Date of training 11/13/2019

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 Earth

OVERALL WETLAND CATEGORY III (based on functions ☒ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

 Category I - Total score = 22 - 27
 Category II - Total score = 19 - 21
 X 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	M	M	M	Total
Score Based on Ratings	6	6	6	18

**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	

Wetland name or number

Floodplain forest	
None of the above	

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	

Wetland name or number

Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

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

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 4 apply, and go to Question 5.

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

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

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

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

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

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

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

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

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

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

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

- ☐ NO - go to 5
- ☒ **YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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:

Wetland has multiple classes but is overall Depressional.

Wetland name or number

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0. Does the site have the potential to improve water quality?****D 1.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|--|------------|---|
| Wetland has no surface water outlet | points = 5 | 3 |
| ☒ Wetland has an intermittently flowing outlet | points = 3 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 3 | |
| Wetland has a permanently flowing, unconstricted, surface outlet | points = 1 | |

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)

Yes = 3 No = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- | | | |
|--|------------|---|
| Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area | points = 5 | 5 |
| Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area | points = 3 | |
| Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area | points = 1 | |
| Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area | points = 0 | |

D 1.4. Characteristics of seasonal ponding or inundation:*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- | | | |
|---|------------|---|
| Area seasonally ponded is $> \frac{1}{2}$ total area of wetland | points = 3 | 0 |
| Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland | points = 1 | |
| Area seasonally ponded is $< \frac{1}{4}$ total area of wetland | points = 0 | |

Total for D 1

Add the points in the boxes above

8

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

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?**D 2.1. Does the wetland receive stormwater discharges?** Yes = 1 No = 0

1

D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

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?

Source Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

1

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

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?**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?**

Yes = 1 No = 0

0

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]?

Yes = 1 No = 0

1

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)?

Yes = 2 No = 0

0

Total for D 3

Add the points in the boxes above

1

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

Record the rating on the first page

Wetland name or number

DEPRESSIONAL WETLANDSPoints (only 1
score per box)**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland has no surface water outlet | points = 8 | 4 |
| ☒ Wetland has an intermittently flowing outlet | points = 4 | |
| ☐ Wetland has a highly constricted permanently flowing outlet | points = 4 | |
| Wetland has a permanently flowing unconstricted surface outlet | points = 0 | |
| <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i> | | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- | | | |
|---|------------|---|
| Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 8 | 2 |
| Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 6 | |
| ☐ The wetland is a headwater wetland | points = 4 | |
| ☐ Seasonal ponding: 1 ft - < 2 ft | points = 4 | |
| Seasonal ponding: 6 in - < 1 ft | points = 2 | |
| Seasonal ponding: < 6 in or wetland has only saturated soils | points = 0 | |

Total for D 4

Add the points in the boxes above

6

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

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff? Yes = 1 No = 0 0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0 0

Total for D 5

Add the points in the boxes above

1

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

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?**D 6.1. The wetland is in a landscape that has flooding problems.**Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND | | 1 |
| Flooding occurs in sub-basin that is immediately down-gradient of wetland | points = 2 | |
| Surface flooding problems are in a sub-basin farther down-gradient | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. | points = 0 | |
| <i>Explain why</i> | | |
| ☐ There are no problems with flooding downstream of the wetland | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance

n

Wetland name or number

in a regional flood control plan?

Yes = 2 No = 0

0

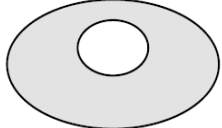
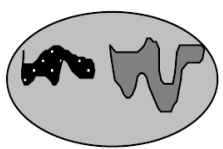
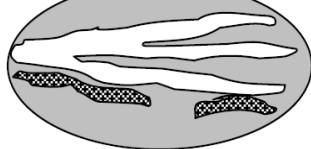
Total for D 6

Add the points in the boxes above

1

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

Record the rating on the first page

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i>		1
☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover ☐ Emergent plants > 12 - 40 in (> 30 -100 cm) high are the highest layer with $> 30\%$ cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover ☒ Scrub-shrub (areas where shrubs have $> 30\%$ cover) ☒ Forested (areas where trees have $> 30\%$ cover)		
H 1.2. Is one of the vegetation types Aquatic Bed?		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> ☐ Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> ☐ Yes = 3 No = 0		0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species 5 Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		1
H 1.4. <u>Interspersion of habitats</u> 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. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		2
 None = 0 points  Low = 1 point  Moderate = 2 points    All three diagrams in this row are HIGH = 3 points		

Wetland name or number

Riparian braided channels with 2 classes
--

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.			
☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☐ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☒ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ☒ Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		2	
Total for H 1		Add the points in the boxes above	6

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 28 % undisturbed habitat + (9 % moderate & low intensity land uses / 2) = 32.5% > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 82 % undisturbed habitat + (9 % moderate & low intensity land uses / 2) = 86.5% Undisturbed habitat > 50% of Polygon points = 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		
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		
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 Yes = 3 No = 0		
Total for H 2		Add the points in the boxes above

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

H 3.0. Is the habitat provided by the site valuable to society?	
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. Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ 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	

Wetland name or number

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

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>	
SC 1.0. Vernal Pools Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to SC 1.1 ☒ No = Not vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to SC 1.2 ☒ No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? ☐ Yes = Category II ☒ No = Category III	
SC 2.0. Alkali wetlands Does the wetland meet one of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 ☐ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. ☐ Yes = Category I ☒ No = Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to SC 3.2 ☒ No - Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☒ No = Not WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - Contact WNHP/WDNR and to SC 3.4 ☒ No = Not WHCV 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? ☐ Yes = Category I ☒ No = Not WHCV	

SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i>	
SC 4.1.	Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> ☐ Yes - Go to SC 4.3 ☒ No - Go to SC 4.2
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? ☐ Yes - Go to SC 4.3 ☒ No = Is not a bog for rating
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? ☐ Yes = Category I bog ☒ No - Go to SC 4.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.
SC 4.4.	Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? ☐ Yes = Category I bog ☒ No - Go to SC 4.5
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? ☐ Yes = Is a Calcareous Fen for purpose of rating ☒ No - Go to SC 4.6
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: ☐ Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems ☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland ☐ Yes = Is a Category I calcareous fen ☒ No = Is not a calcareous fen
SC 5.0. Forested Wetlands <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>	
	☒ The wetland is within the 100 year floodplain of a river or stream ☐ Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species ☐ 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) ☐ Yes - Go to SC 5.1 ☒ No = Not a forested wetland with special characteristics
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)? ☐ Yes = Category I ☒ No - Go to SC 5.2
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? ☐ Yes = Category I ☒ No - Go to SC 5.3
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)? ☐ Yes = Category II ☒ No - Go to SC 5.4
SC 5.4.	Is the forested component of the wetland within the 100 year floodplain of a river or stream? ☒ Yes = Category II ☐ No = Not a forested wetland with special characteristics

Category of wetland based on Special Characteristics
Choose the highest rating if wetland falls into several categories
If you answered No for all types, enter "Not Applicable" on Summary Form

Cat. II

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☐ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☐ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- ☐ **Juniper Savannah:** All juniper woodlands.

Wetland name or number

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

Wetlands and Other Waters Report Nason Creek SR207 Realignment and Habitat Restoration Project

**Prepared for
Yakama Nation Fisheries**

Prepared by



19803 North Creek Parkway
Bothell, Washington 98011

November 2025

GENERAL DISCLAIMER FOR SCIENTIFIC WORK PRODUCTS

This deliverable was prepared in accordance with generally accepted professional practices that are typically utilized for scientific work products. The work was performed within the limitations and assumptions of our approved scope of work, and the descriptive documentation associated with this deliverable. Unless explicitly included in our approved scope of work, information provided in this deliverable has not been prepared to meet industry standards for engineering and should not be used for construction.

Table of Contents

1.0 Introduction.....	1
2.0 Landscape Setting and Land Use.....	1
2.1 Project Location and Land Ownership.....	1
2.2 Vegetation	2
2.3 Priority Habitats and Species.....	2
2.4 Desktop Review	2
2.4.1 National Wetlands Inventory, National Hydrography Dataset	2
2.4.2 Natural Resources Conservation Service Soils.....	3
3.0 Site Alterations	3
4.0 Precipitation Data and Analysis.....	3
5.0 Methods	5
5.1 Pre-field Work.....	5
5.2 Field Work.....	5
5.2.1 Mapping Methods	5
5.2.2 Wetland Delineations	5
5.2.3 Other Waters Evaluations.....	6
6.0 Results.....	6
6.1 Wetlands.....	6
6.2 Other Waters.....	6
7.0 Summary.....	7
8.0 Disclaimer	7
9.0 References.....	8

List of Tables

Table 1. Priority Habitats and Species Mapped in the Project Survey Area	2
Table 2. Soils Mapped in the Project Survey Area	3
Table 3. Precipitation Data – Current and Historical (Inches)	4
Table 4. Summary of Wetland Features	6

List of Figures

Figure 1. Project Location

Figure 2. Taxlots

Figure 3. NRCS Soils

Figure 4. National Wetlands Inventory and National Hydrography Dataset

Figure 5. Delineated Wetlands and Other Waters

List of Appendices

Appendix A. USACE Wetland Determination Data Sheets and Eastern Washington Wetland Rating Forms

Appendix B. Wetlands and Other Waters Photolog

1.0 Introduction

Yakama Nation Fisheries contracted Tetra Tech, Inc. (Tetra Tech) to conduct a wetland and other waters survey for a road realignment and habitat restoration project along State Route (SR) 207 and near Nason Creek. The Project is located in Chelan County, Washington, approximately 3 miles west of the town of Plain, WA (Figure 1). The Nason Creek SR207 Realignment and Habitat Restoration Project Area is located in portions of Township 26 North, Range 17 East, Sections 09 and 16.

The purpose of the survey was to delineate wetland and other water features to support the Project's permitting and confirm the wetland delineation boundaries of previous wetland surveys (Hamer 2021 and Hamer 2022). Two staff members experienced in conducting wetland delineations in the Western Mountains, Valleys, and Coast region were involved in the field surveys, as well as review of the data and reporting:

- Katie Pyne, Wetland Scientist, with 7 years of experience conducting wetland and other waters assessments in the Pacific Northwest. Ms. Pyne is the field and report lead.
- Jess Taylor, Wetland Scientist, with 18 years of experience conducting wetland and other water assessments in the Pacific Northwest. Ms. Taylor provided senior review.

2.0 Landscape Setting and Land Use

The Project Area is located within the Level III North Cascades Ecoregion, and within the further subdivided Level IV Chiwaukum Hills and Lowlands Ecoregion (Thorson et al. 2003). In addition, the Project Area is within U.S. Department of Agriculture Land Resource Region (LRR) A, Northwestern Forest, Forage, and Specialty Crop Region, Cascade Mountains, Eastern Slope Subregion (NRCS 2025a). The LRR A, Northwestern Forest, Forage, and Specialty Crop Region is equivalent to LRR A Northwest Forests and Coast Region in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* Version 2.0 (USACE 2010).

2.1 Project Location and Land Ownership

The Project Area is approximately 4.1 acres and is located on National Forest Land, and some private parcels adjacent to the forest. The private parcels were not accessed during the survey but were assessed from the forest land and public road (SR207). The wetlands and other waters Project Area encompasses areas that may be impacted as part of the Project, related to road relocation, temporary laydown and staging areas. Figure 2 shows the tax lots within and surrounding the Project Area.

2.2 Vegetation

Plant species names and associated wetland indicator status ratings for the Western Mountains Valley and Coast are from the National Wetland Plant List (NWPL; USACE 2023). The following wetland indicator ratings are ordered according to the percent likelihood of the plant occurring in wetlands, from most likely to least likely: Obligate (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL). Species that do not appear on the NWPL are considered to be Upland plants.

Species documented in the Project Area during the October survey most frequently included vine maple (*Acer circinatum*, FAC), cottonwood (*Populus balsamifera*, FAC), snowberry (*Symphoricarpos albus*, FACU), evergreen blueberry (*Vaccinium ovatum*, FACU), skunk cabbage (*Lysichiton americanus*, OBL) and thimbleberry (*Rubus parviflorus*, FAC).

2.3 Priority Habitats and Species

The Washington Department of Ecology requests information on priority habitats and species from the Washington Department of Fish and Wildlife (WDFW). Prior to the field work, Tetra Tech reviewed the WDFW Priority Habitats and Species data (WDFW 2025), and a summary of these features are listed in Table 1 below.

Table 1. Priority Habitats and Species Mapped in the Project Survey Area

Type	Name
Habitat	Aspen stands
Habitat	Freshwater pond
Habitat	Freshwater forested/shrub wetland
Species	Mule deer
Species	Northern spotted owl

2.4 Desktop Review

Prior to field work, Tetra Tech reviewed the National Wetlands Inventory (NWI), National Hydrography Dataset (NHD), hydric soils data, and aerial photographs (Google Earth Pro 2025) to identify potential wetlands and other waters.

2.4.1 National Wetlands Inventory, National Hydrography Dataset

Desktop review of data from the NWI (USFWS 2025) and the NHD (NHD 2025) shows multiple stream segments and wetlands within the Project Area (Figure 4). The NWI mapped wetlands are categorized as riverine, freshwater pond, palustrine scrub/shrub, and palustrine forested.

2.4.2 Natural Resources Conservation Service Soils

Four soil map units are mapped in the Project Area (Figure 3). Table 2 summarizes the soil types and indicates if they are considered hydric. The dominant soil in the Project Area is Beverly gravelly fine sandy loam, covering approximately 82 percent of the Project Area, followed by Wintoner silt loam, 3 to 8 percent slopes, at approximately 9 percent of the Project Survey Area. Only one soil (Peoh silt loam) in the Project Area is considered a hydric soil (NRCS 2025a).

Table 2. Soils Mapped in the Project Survey Area

Map Unit Code	Map Unit Name	Hydric Rating	Acres
Bf	Beverly gravelly fine sandy loam	No	0.21
BrA	Brief gravelly sandy loam, 0 to 3 percent slopes	No	1.09
Pe	Peoh silt loam	Yes	1.12
WnB	Wintoner silt loam, 3 to 8 percent slopes	No	0.42

3.0 Site Alterations

Site alterations are those activities that directly or indirectly impact wetlands and other waters such that the function or area of the feature changes significantly. A significant alteration would be one that renders the feature non-functioning, or one that changes the boundaries.

Land use in the Project Area is primarily floodplain of Nason Creek with Highway 207 which is parallel to Nason Creek. The alterations associated with construction of the road may have affected the geographic size or the hydroperiod of wetlands and other waters.

4.0 Precipitation Data and Analysis

Precipitation data for the period preceding and during field work were collected from the National Weather Service Station, Plain, Washington (NOAA 2025). This station is approximately 3 miles east of the Project Area. Historical climate data including average monthly precipitation were reviewed in the Natural Resources Conservation Service WETS table for Plain, Washington (NRCS 2025b).

Field work was conducted on October 6, 2025, during that time there was no precipitation. For the 14-day span preceding the field work, 0.08 inches of precipitation were measured. For the Water Year October 1, 2024, through October 6, 2025, precipitation was approximately 96 percent of average due to above average precipitation in November, December, and March (Table 3).

Table 3. Precipitation Data – Current and Historical (Inches)

Precipitation	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2024	Mar 2025	Apr 2025	May 2025	June 2025	July 2025	August 2025	Sept 2025	Water Year Total
Recorded Monthly Precipitation Totals (inches) ¹	0.87	5.57	9.01	0.83	2.98	4.33	0.54	0.14	0.03	0.04	0.46	0.47	25.27
WETS Average Monthly Precipitation (inches) ²	2.16	4.55	5.02	4.48	3.06	2.23	1.27	1.13	0.83	0.43	0.57	0.72	26.45
Recorded Precipitation Relative to WETS (%)	40	122	179	19	97	194	43	12	4	9	81	65	96
Normal Monthly Range of Precipitation (inches) ²	1.02- 2.64	2.89- 5.49	3.63- 5.92	2.98- 5.37	2.05- 3.66	1.48- 2.67	0.78- 1.54	0.56- 1.38	0.45- 1.01	0.19- 0.49	0.16- 0.58	0.29- 0.82	N/A
1. National Weather Service, Plain, WA Climate Station. 2. WETS Table for Plain, WA, years 1974-2024.													

5.0 Methods

5.1 Pre-field Work

In preparation for the field work, Tetra Tech reviewed NWI, NHD, NRCS soils data, and aerial photographs to identify potential wetlands and other waters, as described in the preceding sections. Tetra Tech prepared digital field maps with these data and uploaded these maps onto a Samsung Android data collection tablet to assist field staff in identifying the locations of probable wetlands and non-wetland waters within or adjacent to the Project Area.

The Washington Natural Heritage Program (WNHP 2018) data were used to determine if natural heritage features associated with wetlands exist in or near the Project Area. No wetlands associated with natural heritage features were noted as occurring in the Project Area.

The following guidance documents and procedures were reviewed:

- Western Mountains, Valleys, and Coast Supplement (USACE 2010);
- Wetlands Delineation Manual, Technical Report Y-87-1 (the Manual) (USACE 1987);
- Streamflow Duration Assessment Method for the Pacific Northwest (SDAM; Nadeau 2015);
- Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979); and
- Washington State Wetland Rating System for Eastern Washington 2014 Update (Hruby 2014).

5.2 Field Work

Field investigations for the delineation of wetlands and other waters included pedestrian surveys within the Project Area. Tetra Tech conducted the field survey on October 6, 2025.

5.2.1 Mapping Methods

Wetland boundaries, photograph locations, and sample plot locations were recorded using Juniper Geode series GPS units, configured to differentially correct positions in real-time using the Satellite Based Augmentation System, which typically results in positional error of less than 1 meter (Juniper Systems 2025).

5.2.2 Wetland Delineations

Wetland presence was determined as per methods in the Manual and the WMVC Supplement. A field indicator of each of the three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to make a positive wetland determination. Field evaluations for potential wetlands were conducted using the following guidelines:

- Several sample plots were established in the potential freshwater emergent wetlands identified by NWI data (USFWS 2025). The sample plots were dug where it was judged most likely to have wetland characteristics (i.e., the lowest or most green place). Photographs were taken to document conditions within the NWI boundary.

5.2.3 Other Waters Evaluations

Other waters were evaluated using the following criteria:

- Streams were delineated based on the presence of Ordinary High Water Marks (OHWM) such as a defined channel with bed scour, sediment deposition, or other evidence of regular flow.

6.0 Results

All wetlands and other waters evaluated in the Project Survey Area are depicted in Figure 5.

6.1 Wetlands

Tetra Tech found two wetlands within the Project Survey Area (Table 4). The Western Mountains, Valleys, and Coast Region Wetland Determination Data Sheets showing conditions of the wetlands are found in Appendix A. WT5 may be a Water of the United States (WOTUS) under the federal Clean Water Act, and is expected to be a Water of the State (WOTS) under the Revised Code of Washington 90.48.020. The wetland may be a WOTUS because of surface water connection to Nason Creek. WT6 is not expected to be Waters of the United States (WOTUS) because it lacks a surface water connection to a navigable waterway (an established WOTUS). Both wetlands are anticipated to be WOTS because state laws protecting wetlands are broader than the current federal regulations.

Table 4. Summary of Wetland Features

Feature Name	HGM	Cowardin	Category	Acreage	WOTUS ¹	WOTS ²
WT5	Depressional	PSS	II	3.68	Yes	Yes
WT6	Depressional	PEM	III	0.16	No	Yes
Total Wetlands Acreage				3.84		
1. WOTUS = Potential Water of the United States						
2. WOTS = Potential Water of the State						

6.2 Other Waters

No other waters were found within the Project Survey Area.

7.0 Summary

Using the methods prescribed in the Manual, the WMVC Supplement, and SDAM, two wetlands were found within the Project Survey Area (Figure 5). The total area of preliminary jurisdictional waters and wetlands within the Project Survey Area is 3.84 acres. Photograph locations are depicted on Figure 5 and a photolog is included as Appendix B.

8.0 Disclaimer

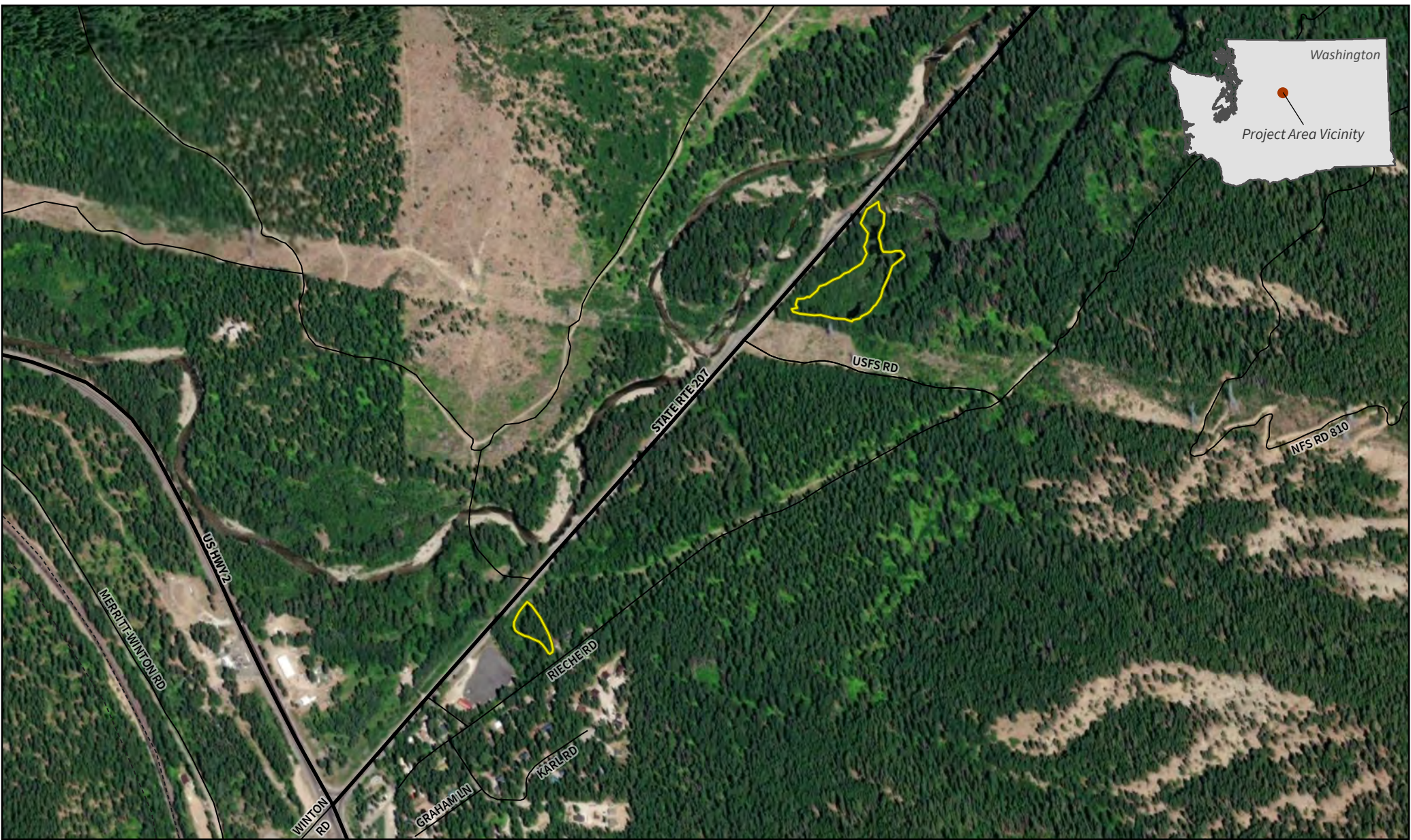
This report documents the investigation, best professional judgment, and conclusions of the investigators. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the U.S. Army Corps of Engineers and Washington Department of Ecology.

9.0 References

- Cowardin, L.M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Washington, DC. FWS/OBS-79/31.
- Google Earth Pro. 2025. Historical Aerial Imagery of the Project Study Area from 2023, 2021, 2019, 2016, 2015, 2014, 2013, 2012, 2011, 2006, 2005, 2003, 2000, and 1994.
- Hamer Environmental. 2021. Wetland Assessment Report; Wetland Delineation Nason Creek River Mile 3.4 to 4.6 Fish Enhancement Project, Nason Creek. WA. January 2021.
- Hamer Environmental. 2022. Wetland Assessment Report; Wetland Delineation Nason Creek Floodplain Repeat Winton, Chelan County WA. January 14, 2022.
- Hruby, T. 2014. Washington State Wetland Rating System for Eastern Washington: 2014 Update. (Publication #14-06-030). Olympia, WA: Washington Department of Ecology.
- Juniper Systems. 2018. Geode Real-Time Sub-meter GPS Receiver. Available URL: <http://www.junipersys.com/Juniper-Systems-Rugged-Handheld-Computers/products/Geode-Sub-Meter-GPS-Receiver>
- NHD (National Hydrography Dataset). 2025. Available URL: <http://datagateway.nrcs.usda.gov/> Accessed: September 2025.
- NOAA (National Oceanic and Atmospheric Administration). 2025. National Weather Service. Plain, WA Climate Station. <https://w2.weather.gov/climate/index.php?wfo=pdt>. Accessed: October 2025.
- NRCS (Natural Resources Conservation Service). 2025a. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296.
- NRCS. 2025b. Wetlands (WETS) Climate Tables. Plain, WA Climate Station. Available online at: <http://agacis.rcc-acis.org/?fips=>. Accessed: October 2025.
- Thorson, T.D., Bryce, S.A., Lammers, D.A., Woods, A.J., Omernik, J.M., Kagan, J., Pater, D.E., and Comstock, J.A., 2003. Ecoregions of Washington (color poster with figure, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (figure scale 1:1,500,000). Available URL: <https://www.epa.gov/eco-research/ecoregion-download-files-state-region-10#pane-35>. Accessed: October 2025.
- USACE (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. January 1987. Wetlands Research Program. U.S. Army Corps of Engineers, Waterways Experiment Station, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199.

- USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2). ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE. 2023. U.S. Army Corps of Engineers National Wetland Plant List, version 3.6. U.S. Army Corps of Engineers. Engineer Research and Development Center. Vicksburg, MS. Available online at: <https://nwpl.sec.usace.army.mil/>
- USFWS (U.S. Fish and Wildlife Service). 2025. National Wetlands Inventory. Wetlands Data by State, Washington. Available online at: <https://www.fws.gov/wetlands/Data/State-Downloads.html>. Downloaded September 2025.
- WDFW. 2025. Washington Department of Fish and Wildlife. Priority Habitats and Species Mapper. Available online at: [Priority Habitats and Species: Maps | Washington Department of Fish & Wildlife](#). Accessed October 2025.
- WNHP (Washington Natural Heritage Program). 2018. Sections that contain Natural Heritage Features Associated with Wetlands. Available online at: https://www.dnr.wa.gov/publications/amp_nh_wetlands_trs.pdf?kbi7wbv. Accessed October 2025.

Figures



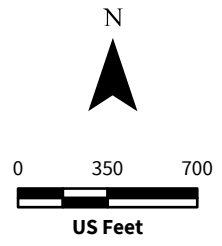
**Nason Creek SR207 Realignment
and Habitat Restoration Project
Wetland Delineation**

Figure 1
Overview



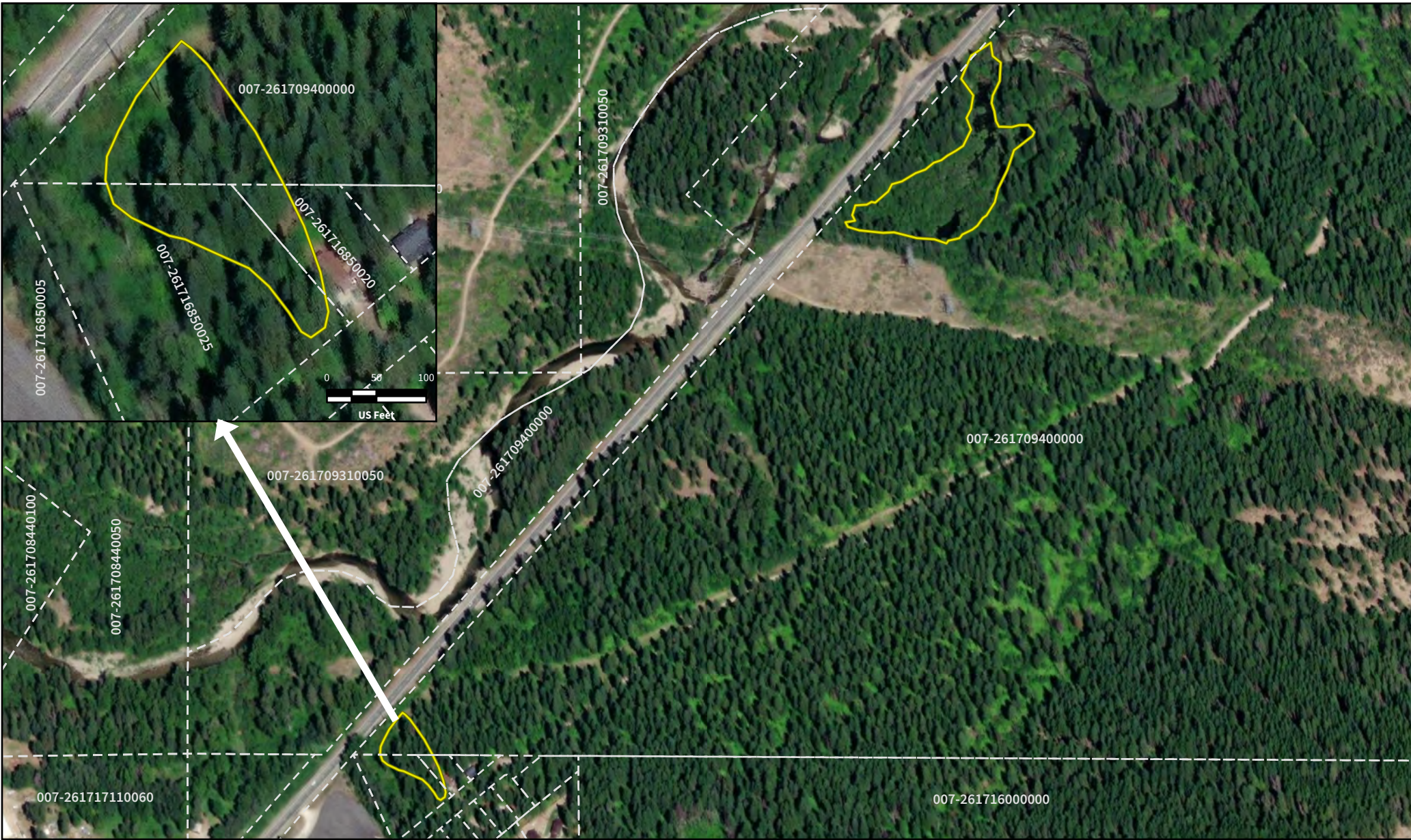
Legend

- Wetland Survey Areas
- Major Roads
- Local Roads



NOT FOR CONSTRUCTION

Aerials - ESRI, Maxar



Nason Creek SR207 Realignment and Habitat Restoration Project Wetland Delineation

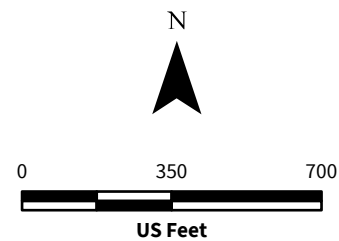
Figure 2
Taxlots

Legend

- Wetland Survey Areas
- Major Roads
- Local Roads
- Taxlots



Aerials - ESRI, Maxar
Taxlots - WA State Geoservices



NOT FOR CONSTRUCTION



Nason Creek SR207 Realignment and Habitat Restoration Project Wetland Delineation

Figure 3
NRCS Soils



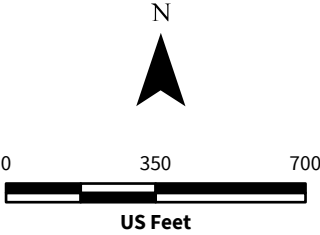
Legend

- Wetland Survey Areas
- Major Roads
- Local Roads

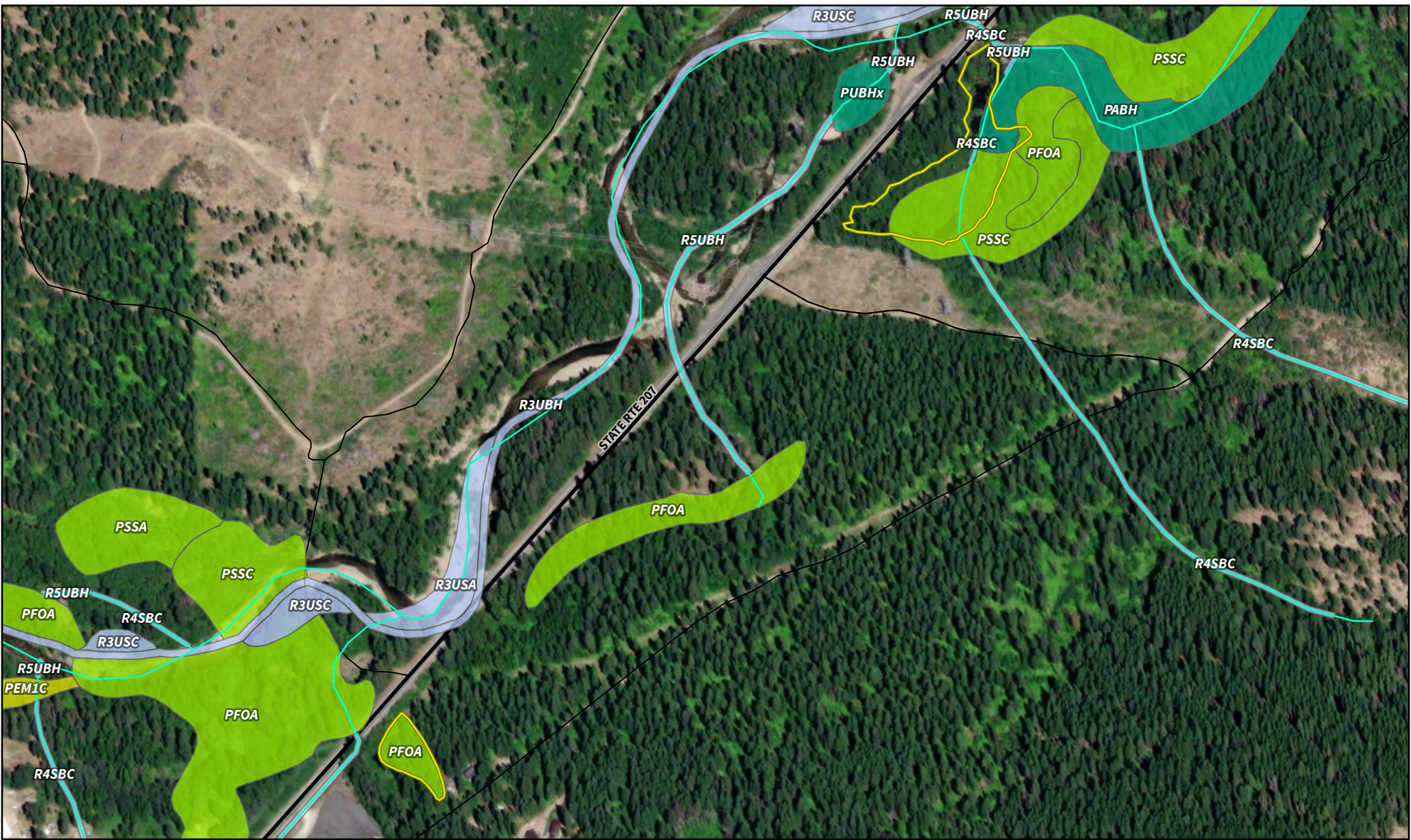
NRCS Soils

- Bf: Beverly gravelly fine sandy loam
- BrA: Brief gravelly sandy loam, 0 to 3 percent slopes
- Pe: Peoh silt loam
- WnB: Wintoner silt loam, 3 to 8 percent slopes

Aerials - ESRI, Maxar
Soils Data - NRCS Web Soil Survey



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Nason Creek SR207 Realignment and Habitat Restoration Project Wetland Delineation

Figure 4
NHD and NWI

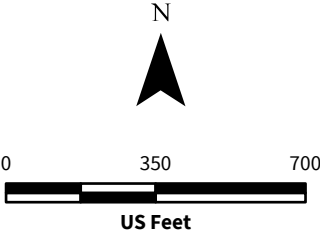


Legend

- Wetland Survey Areas
- Major Roads
- Local Roads
- NHD Flowline

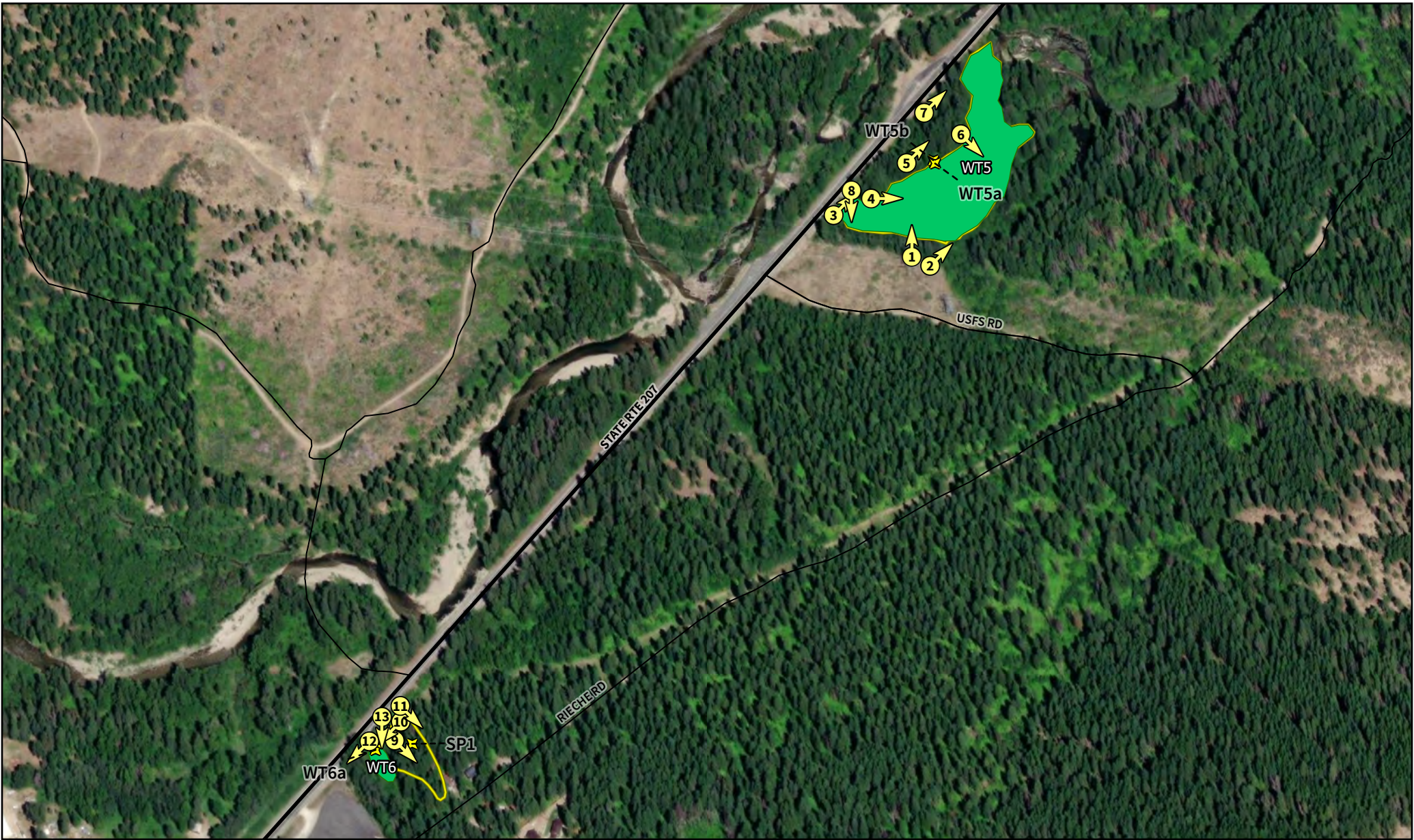
NWI Wetlands

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



Aerials - ESRI, Maxar
NHD Data - USGS National Map
NWI Data - USFWS National Wetland Inventory

NOT FOR CONSTRUCTION



**Nason Creek SR207 Realignment
and Habitat Restoration Project
Wetland Delineation**

Figure 5
Delineated Features
Overview



Legend

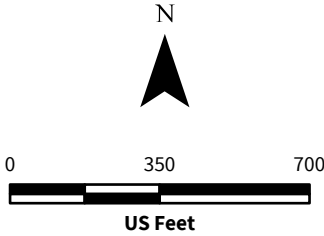
- Wetland Survey Areas
- Major Roads
- Local Roads
- Mapped Wetland



Photo Point

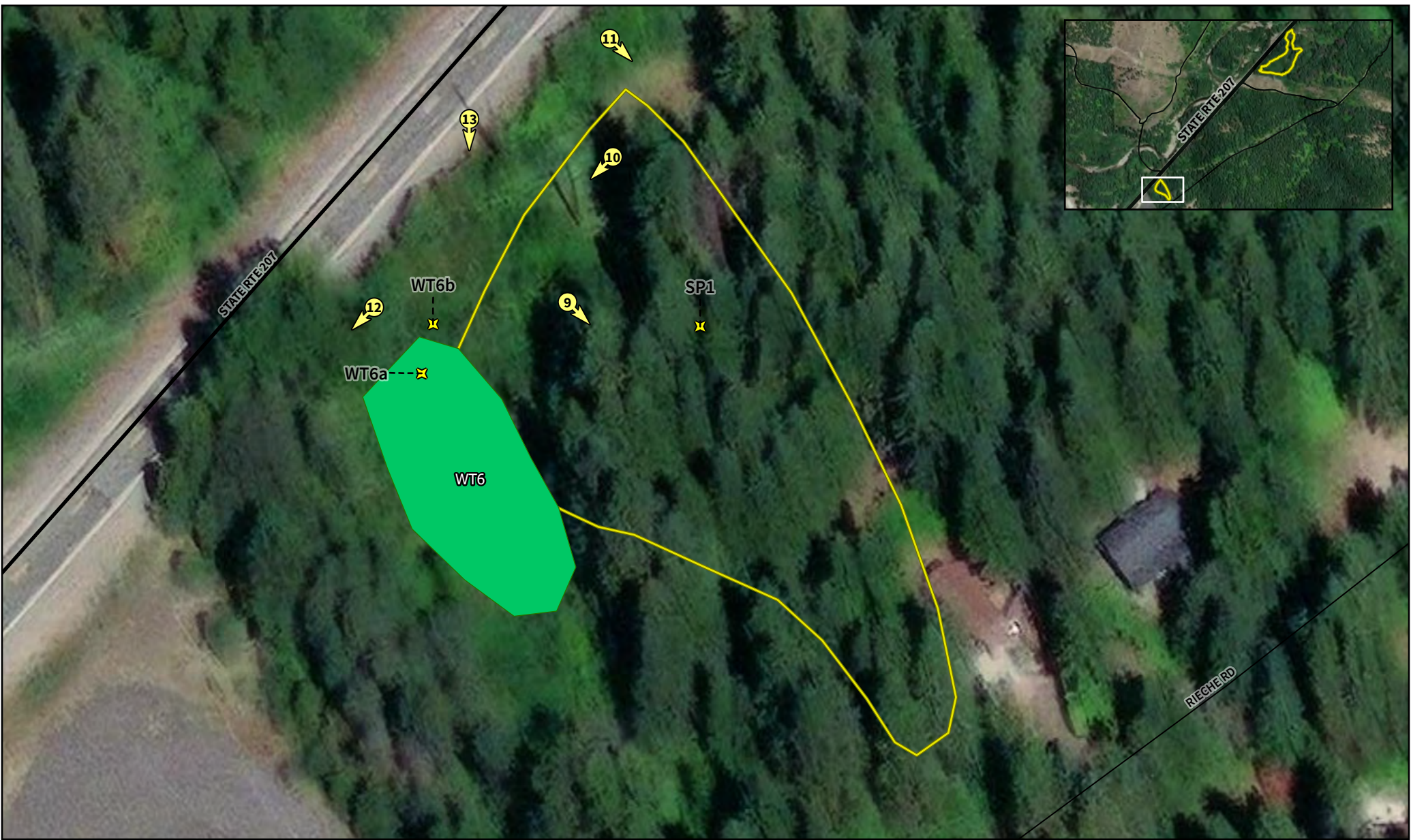


Sample Point



Aerials - ESRI, Maxar
Delineated Data - Sub-meter grade GPS devices
were used to collect real-time, sub-meter GNSS data.

NOT FOR CONSTRUCTION



Nason Creek SR207 Realignment and Habitat Restoration Project Wetland Delineation

Figure 5, Sheet 1
Delineated Features



Legend

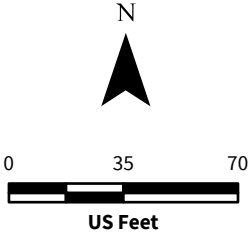
- Wetland Survey Areas
- Major Roads
- Local Roads
- Mapped Wetland



Photo Point

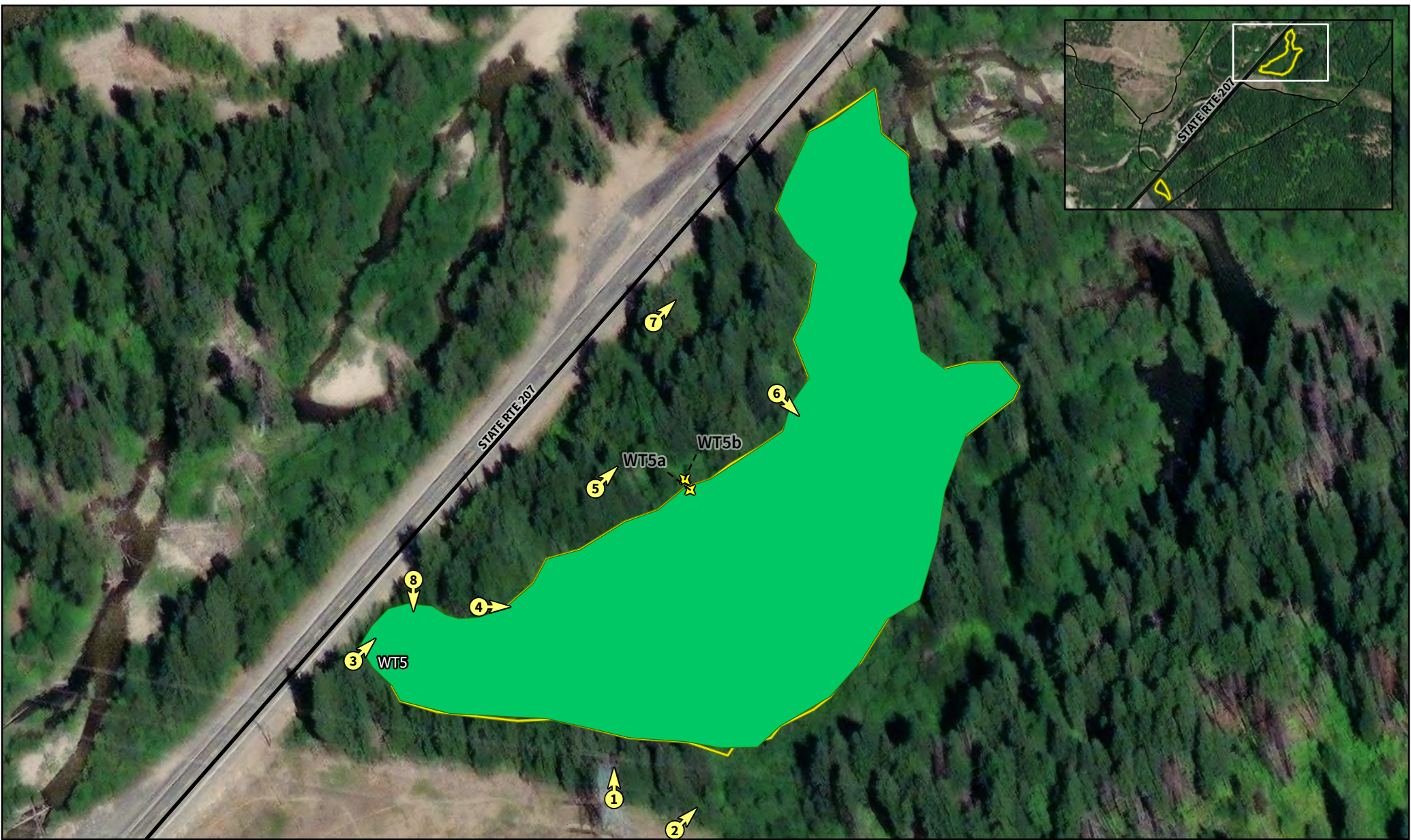


Sample Point



Aerials - ESRI, Maxar
Delineated Data - Sub-meter grade GPS devices
were used to collect real-time, sub-meter GNSS data.

NOT FOR CONSTRUCTION



Nason Creek SR207 Realignment and Habitat Restoration Project Wetland Delineation

Figure 5, Sheet 2
Delineated Features



Legend

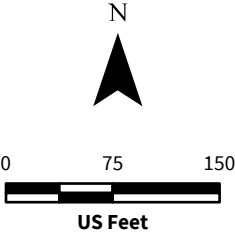
- Wetland Survey Areas
- Major Roads
- Local Roads
- Mapped Wetland



Photo Point



Sample Point



Aerials - ESRI, Maxar
Delineated Data - Sub-meter grade GPS devices
were used to collect real-time, sub-meter GNSS data.

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Appendix A. USACE Wetland Determination Data Sheets and Eastern Washington Wetland Rating Forms

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region See ERDC/EL TR-10-3; the proponent agency is CECW-COR		OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																																																																																																																																																																													
Project/Site: <u>SR207</u> City/County: <u>Chelan County</u> Sampling Date: <u>2025-10-06</u>																																																																																																																																																																															
Applicant/Owner: <u>Yakama Nation Fisheries</u> State: <u>Washington</u> Sampling Point: <u>SP1</u>																																																																																																																																																																															
Investigator(s): <u>Katie Pyne</u> Section, Township, Range: <u>sec 09 T026N R017E</u>																																																																																																																																																																															
Landform (hillside, terrace, etc.): <u>Floodplain</u> Local relief (concave, convex, none): <u>None</u> Slope (%): <u>3-7</u>																																																																																																																																																																															
Subregion (LRR/MLRA): <u>LRR A, MLRA 6</u> Lat: <u>47.7594659</u> Long: <u>-120.7347479</u> Datum: <u>WGS84</u>																																																																																																																																																																															
Soil Map Unit Name: <u>Peoh silt loam</u> NWI classification: <u>PFOA</u>																																																																																																																																																																															
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.																																																																																																																																																																															
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SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	3/3	100					SIL

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Loamy Mucky Mineral (F1) (except MLRA 1) ☐ 1 cm Muck (A9) (LRR D, G) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Iron Monosulfide (A18) ☐ Depleted Dark Surface (F7) ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G)	☐ 2 cm Muck (A10) (LRR A, E) ☐ Iron-Manganese Masses (F12) (LRR D) ☐ Red Parent Material (F21) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No ☐
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Remarks:
Not hydric

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No ☐ Depth (inches): _____ Water Table Present? Yes _____ No ☐ Depth (inches): _____ Saturation Present? Yes _____ No ☐ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology

AGENCY DISCLOSURE NOTIFICATION

The public reporting burden for this collection of information, OMB Control Number 0710-0024, is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR REQUEST TO THE ABOVE EMAIL.**

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

U.S. Army Corps of Engineers				OMB Control #: 0710-0024, Exp: 09/30/2027	
WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region				Requirement Control Symbol EXEMPT:	
See ERDC/EL TR-10-3; the proponent agency is CECW-COR				(Authority: AR 335-15, paragraph 5-2a)	
Project/Site: SR207		City/County: Chelan County		Sampling Date: 2025-10-06	
Applicant/Owner: Yakama Nation Fisheries		State: Washington		Sampling Point: WT5a	
Investigator(s): Katie Pyne		Section, Township, Range: sec 09 T026N R017E			
Landform (hillside, terrace, etc.): Depression		Local relief (concave, convex, none): Concave		Slope (%): 3-7	
Subregion (LRR/MLRA): LRR A, MLRA 6		Lat: 47.7649267		Long: -120.7274974	
Datum: WGS84					
Soil Map Unit Name: Beverly gravelly fine sandy loam		NW1 classification: None			
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.					
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Hydric Soil Present? Yes ☒ No ☐					
Wetland Hydrology Present? Yes ☒ No ☐					
Remarks: Wetland plot					
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4.					
		0	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)					Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 60 x 1 = 60 FACW species 0 x 2 = 0 FAC species 40 x 3 = 120 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 100 (A) 180.00 (B) Prevalence Index = B/A = 1.8
1. Salix lutea		30	Y	OBL	
2. Acer circinatum		20	Y	FAC	
3.					
4.					
5.					
		50.0	=Total Cover		
Herb Stratum (Plot size: 5' radius)					Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Lysichiton americanus		30	Y	OBL	
2. Equisetum arvense		20	Y	FAC	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
		50.0	=Total Cover		
Woody Vine Stratum (Plot size: 30' radius)					Hydrophytic Vegetation Present? Yes ☒ No ☐
1.					
2.					
		0	=Total Cover		
% Bare Ground in Herb Stratum 30					
Remarks: Wetland veg					

SOIL

Sampling Point: WT5a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	2/2	100				SIL	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
☐ Histic Sol (A1)	☐ 2 cm Muck (A10) (LRR A, E)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12) (LRR D)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☒ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ 1 cm Muck (A9) (LRR D, G)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Iron Monosulfide (A18)	
☐ Sandy Mucky Mineral (S1)	
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
H2S

HYDROLOGY

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

Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u> 2 </u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u> 2 </u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Standing water

AGENCY DISCLOSURE NOTIFICATION

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PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

U.S. Army Corps of Engineers				OMB Control #: 0710-0024, Exp: 09/30/2027	
WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region				Requirement Control Symbol EXEMPT:	
See ERDC/EL TR-10-3; the proponent agency is CECW-COR				(Authority: AR 335-15, paragraph 5-2a)	
Project/Site: SR207		City/County: Chelan County		Sampling Date: 2025-10-06	
Applicant/Owner: Yakama Nation Fisheries		State: Washington		Sampling Point: WT5b	
Investigator(s): Katie Pyne		Section, Township, Range: sec 09 T026N R017E			
Landform (hillside, terrace, etc.): Depression		Local relief (concave, convex, none): Convex		Slope (%): 3-7	
Subregion (LRR/MLRA): LRR A, MLRA 6		Lat: 47.7649564		Long: -120.727521	
				Datum: WGS84	
Soil Map Unit Name: Beverly gravelly fine sandy loam		NWI classification: None			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes ☐ No ☒			Is the Sampled Area within a Wetland? Yes ☐ No ☒		
Hydric Soil Present? Yes ☐ No ☒					
Wetland Hydrology Present? Yes ☐ No ☒					
Remarks: Upland plot					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: 30' radius)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 25.00 (A/B)
1.					
2.					
3.					
4.					
		0	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)					Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 30 x 3 = 90 FACU species 80 x 4 = 320 UPL species 0 x 5 = 0 Column Totals: 110 (A) 410.00 (B) Prevalence Index = B/A = 3.73
1. Symphoricarpos albus		30	Y	FACU	
2. Acer circinatum		30	Y	FAC	
3.					
4.					
5.					
		60.0	=Total Cover		
Herb Stratum (Plot size: 5' radius)					Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Rubus parviflorus		30	Y	FACU	
2. Rubus ursinus		20	Y	FACU	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
		50.0	=Total Cover		
Woody Vine Stratum (Plot size: 30' radius)					Hydrophytic Vegetation Present? Yes ☐ No ☒
1.					
2.					
		0	=Total Cover		
% Bare Ground in Herb Stratum 30					
Remarks: Upland veg					

SOIL

Sampling Point: WT5b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	3/3	100					SIL

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ 2 cm Muck (A10) (LRR A, E)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12) (LRR D)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ 1 cm Muck (A9) (LRR D, G)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Iron Monosulfide (A18)	
☐ Sandy Mucky Mineral (S1)	
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No ☒
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Remarks:
Not hydric

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No ☒
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology

AGENCY DISCLOSURE NOTIFICATION

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U.S. Army Corps of Engineers				OMB Control #: 0710-0024, Exp: 09/30/2027	
WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region				Requirement Control Symbol EXEMPT:	
See ERDC/EL TR-10-3; the proponent agency is CECW-COR				(Authority: AR 335-15, paragraph 5-2a)	
Project/Site: SR207		City/County: Chelan County		Sampling Date: 2025-10-06	
Applicant/Owner: Yakama Nation Fisheries		State: Washington		Sampling Point: WT6a	
Investigator(s): Katie Pyne		Section, Township, Range: sec 09 T026N R017E			
Landform (hillside, terrace, etc.): Depression		Local relief (concave, convex, none): Concave		Slope (%): 3-7	
Subregion (LRR/MLRA): LRR A, MLRA 6		Lat: 47.7594074		Long: -120.7352549	
Datum: WGS84					
Soil Map Unit Name: Peoh silt loam		NW1 classification: None			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes ☒ No ☐			Is the Sampled Area within a Wetland? Yes ☒ No ☐		
Hydric Soil Present? Yes ☒ No ☐					
Wetland Hydrology Present? Yes ☒ No ☐					
Remarks: Wetland plot					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: 30' radius)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 3 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
1.					
2.					
3.					
4.					
		0	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)					Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 30 x 1 = 30 FACW species 0 x 2 = 0 FAC species 70 x 3 = 210 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 100 (A) 240.00 (B) Prevalence Index = B/A = 2.4
1. Populus balsamifera		50	Y	FAC	
2. Acer circinatum		20	Y	FAC	
3.					
4.					
5.					
		70.0	=Total Cover		
Herb Stratum (Plot size: 5' radius)					Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Lysichiton americanus		30	Y	OBL	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
		30.0	=Total Cover		
Woody Vine Stratum (Plot size: 30' radius)					Hydrophytic Vegetation Present? Yes ☒ No ☐
1.					
2.					
		0	=Total Cover		
% Bare Ground in Herb Stratum 50					
Remarks: Wetland veg					

SOIL

Sampling Point: WT6a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	2/2	100					SIL

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
☐ Histic Solonchale (A1)	☐ 2 cm Muck (A10) (LRR A, E)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12) (LRR D)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☒ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ 1 cm Muck (A9) (LRR D, G)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Iron Monosulfide (A18)	
☐ Sandy Mucky Mineral (S1)	
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
---	---

Remarks:
H2S

HYDROLOGY

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

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No ☐ Depth (inches): 4 (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturated

AGENCY DISCLOSURE NOTIFICATION

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U.S. Army Corps of Engineers				OMB Control #: 0710-0024, Exp: 09/30/2027	
WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region				Requirement Control Symbol EXEMPT:	
See ERDC/EL TR-10-3; the proponent agency is CECW-COR				(Authority: AR 335-15, paragraph 5-2a)	
Project/Site: SR207		City/County: Chelan County		Sampling Date: 2025-10-06	
Applicant/Owner: Yakama Nation Fisheries		State: Washington		Sampling Point: WT6b	
Investigator(s): Katie Pyne		Section, Township, Range: sec 09 T026N R017E			
Landform (hillside, terrace, etc.): Depression		Local relief (concave, convex, none): Convex		Slope (%): 3-7	
Subregion (LRR/MLRA): LRR A, MLRA 6		Lat: 47.7594074		Long: -120.7352549	
Datum: WGS84					
Soil Map Unit Name: Peoh silt loam		NW1 classification: None			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes ☒ No ☐			Is the Sampled Area within a Wetland? Yes ☐ No ☒		
Hydric Soil Present? Yes ☐ No ☒					
Wetland Hydrology Present? Yes ☐ No ☒					
Remarks: Upland plot					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: 30' radius)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)
1.					
2.					
3.					
4.					
		0	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)					Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 10 x 2 = 20 FAC species 40 x 3 = 120 FACU species 40 x 4 = 160 UPL species 0 x 5 = 0 Column Totals: 90 (A) 300.00 (B) Prevalence Index = B/A = 3.33
1. Symphoricarpos albus		40	Y	FACU	
2. Populus balsamifera		30	Y	FAC	
3.					
4.					
5.					
		70.0	=Total Cover		
Herb Stratum (Plot size: 5' radius)					Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Equisetum hyemale		10	Y	FACW	
2. Equisetum arvense		10	Y	FAC	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
		20.0	=Total Cover		
Woody Vine Stratum (Plot size: 30' radius)					Hydrophytic Vegetation Present? Yes ☒ No ☐
1.					
2.					
		0	=Total Cover		
% Bare Ground in Herb Stratum 30					
Remarks: FAC dominated					

SOIL

Sampling Point: WT6b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	3/3	100				SIL	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Loamy Mucky Mineral (F1) (except MLRA 1) ☐ 1 cm Muck (A9) (LRR D, G) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Iron Monosulfide (A18) ☐ Depleted Dark Surface (F7) ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G)	☐ 2 cm Muck (A10) (LRR A, E) ☐ Iron-Manganese Masses (F12) (LRR D) ☐ Red Parent Material (F21) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No ☒
---	--

Remarks:
Not hydric

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No ☒
--	--

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

Remarks:
No hydrology

AGENCY DISCLOSURE NOTIFICATION

The public reporting burden for this collection of information, OMB Control Number 0710-0024, is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR REQUEST TO THE ABOVE EMAIL.**

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

Wetland name or number: WT5

RATING SUMMARY - Eastern Washington

Name of wetland (or ID#): WT5 Date of site visit: 10/06/2025
Rated By: Katie Pyne Trained by Ecology? Yes [X] No [] Date of Training: 10/23/2024
HGM Class used for rating: Depressional
Wetland has multiple HGM classes? Yes [] No [X]

NOTE: Form is not complete without the figures requested (figures can be combined).
Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [Category II] (based on functions [X] 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

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H 6 = M,M,M
8 = H,H,M 5 = H,L,L
7 = H,H,L 5 = M,M,L
7 = H,M,M 4 = M,L,L
6 = H,M,L 3 = L,L,L

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	M	H	M	
Landscape Potential	M	M	H	
Value	H	L	M	Total
Score Based on Ratings	7	6	7	20

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Vernal Pool	
Alkali	
Wetland of High Conservation Value	
Bog	
Calcareous Fen	
Forested	
None of the above	Not Applicable

Maps and figures required to answer questions correctly for Depressional Wetlands

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

DEPRESSIONAL AND FLATS WETLANDS**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0 Does the site have the potential to improve water quality?****D 1.1** What are the characteristics of surface water outflows from the wetland?Wetland has a highly constricted permanently flowing outlet points = 3 **Score: 3****D 1.2** Is the soil 2 in. below the surface a true clay or organic soil?None of the above points = 0 **Score: 0****D 1.3** What are the characteristics and distribution of persistent plants?Wetland has persistent, ungrazed, vegetation for >66% of the wetland area points = 5 **Score: 5****D 1.4** What are the characteristics of seasonal ponding or inundation in the wetland area?Area seasonally ponded is >50% total area of wetland points = 3 **Score: 3****Total for D 1:** **11****Rating of Site Potential**

[] 12-16 = H [X] 6-11 = M [] 0-5 = L

Record the rating on the first page

D 2.0 Does the landscape have the potential to support the water quality function of the site?**D 2.1** Does the wetland unit receive stormwater discharges?Yes points = 1 **Score: 1****D 2.2** Is >10% of the area within 150ft of the wetland in land uses that generate pollutants?No points = 0 **Score: 0****D 2.3** Are there septic systems within 250ft of the wetland?No points = 0 **Score: 0****D 2.4** Are the other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?No points = 0 **Score: 0****D 2.5** What are the other sources of pollutants coming into the wetland?**Total for D 2:** **1****Rating of Landscape Potential**

[] 3-4 = H [X] 1-2 = M [] 0 = L

Record the rating on the first page

D 3.0 Is the water quality improvement provided by the site valuable to society?**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?No points = 0 **Score: 0****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]?Yes points = 1 **Score: 1****D 3.3** Has the site been identified in a watershed or local plan as important for maintaining water quality?Yes points = 2 **Score: 2****Total for D 3:** **3****Rating of Value**

[X] 2-4 = H [] 1 = M [] 0 = L

Record the rating on the first page

Wetland name or number: WT5

DEPRESSIONAL WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0 Does the site have the potential to reduce flooding and erosion?

D 4.1 What are the characteristics of surface water outflows from the wetland?

Wetland has a highly constricted permanently flowing outlet points = 4 **Score:** 4

D 4.2 What is the depth of storage during the wet periods?

Seasonal ponding: 3ft or more above the lowest point in the wetland or the surface of permanent ponding points = 8 **Score:** 8

Total for D 4: **12**

Rating of Site Potential

☒ 12-16 = H ☐ 6-11 = M ☐ 0-5 = L

Record the rating on the first page

Wetland name or number:

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?

D 5.1 Does the wetland unit receive stormwater discharges?

Yes points = 1 **Score:** 1

D 5.2 Is >10% of the area within 150ft of the wetland in a land use that generates runoff?

No points = 0 **Score:** 0

D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

No points = 0 **Score:** 0

Total for D 5: **1**

Rating of Landscape Potential

☐ 3 = H ☒ 1-2 = M ☐ 0 = L

Record the rating on the first page

D 6.0 Are the hydrologic functions provided by the site valuable to society?

D 6.1 Is the wetland in a landscape that has flooding problems?

There are no problems with flooding downstream of the wetland points = 0 **Score:** 0

D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

No points = 0 **Score:** 0

Total for D 6: **0**

Rating of Value

☐ 2-4 = H ☐ 1 = M ☒ 0 = L

Record the rating on the first page

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- ☐ Aquatic Bed
☐ Emergent plants 0-12in (0-30cm) high are the highest layer and have >30% cover
☐ Emergent plants >12-40in (>30-100cm) high are the highest layer with >30% cover
☐ Emergent plants >40in (>100cm) high are the highest layer with >30% cover
☒ Scrub-shrub (areas where shrubs have >30% cover)
☒ Forested (areas where trees have >30% cover)

2 structures

points = 1

Score: 1

H 1.2 Is one of the vegetation types Aquatic Bed?

No

points = 0

Score: 0

H 1.3 What is the surface water potential?

- ☒ The wetland has areas of open water (without emergent or shrub plants) that meet the scoring threshold during March to early June OR in August to the end of September
☐ The wetland has an intermittent or permanent, and unvegetated stream within its boundaries, or along one side
☐ The wetland is along the side of a stream or river with an unvegetated area that is at least 16ft (5m) wide
☐ The wetland is a Lake Fringe wetland

The wetland meets at least one of these criteria

points = 3

Score: 3

H 1.4 What is the richness of plant species in the wetland?

>9 species

points = 2

Score: 2

H 1.5 What is the interspersation of habitats within the wetland?

High

points = 3

Score: 3

H 1.6 What are the special habitat features within the wetland?

- ☐ Loose rocks larger than 4in OR large, downed, woody debris (>4in in diameter) within the area of surface ponding or in a stream.
☒ Cattails or bulrushes are present within the wetland.
☐ Standing snags (diameter at the bottom >4in) in the wetland or within 30m (100ft) of the edge.
☒ Emergent or shrub vegetation in areas that are permanently inundated/ponded
☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) or signs of recent beaver activity.
☒ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

3 habitat features selected

points = 3

Score: 3**Total for H 1:****12****Rating of Site Potential**

[] 15-18 = H [X] 7-14 = M [] 0-6 = L

Record the rating on the first page

Wetland name or number: WT5

H 2.0 Does the landscape have the potential to support the habitat functions of the site?		
H 2.1 What is the percentage of accessible habitat within 1km of the wetland?		
20-30% of 1km Polygon is accessible habitat	points = 2	Score: 2
H 2.2 What is the total habitat in a 1km polygon around the wetland?		
Total habitat is >50% of the 1km polygon	points = 3	Score: 3
H 2.3 What is the land use intensity in a 1km polygon within the wetland?		
<50% of the polygon is high intensity land use	points = 0	Score: 0
H 2.4 Is the wetland in an area where annual rainfall is less than 12in, and its water regime is not influenced by irrigation practices, dams, or water control structures?		
No	points = 0	Score: 0
Total for H 2:		5

Rating of Landscape Potential

[X] 4-6 = H [] 1-3 = M [] 0 = L

Record the rating on the first page

H 3.0 Is the habitat provided by the site valuable to society?		
H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?		
☐ Aspen Stands ☐ Biodiversity Areas and Corridors ☐ Eastside Steppe ☐ Inland Dunes ☐ Juniper Savannah ☐ Old-growth/Mature Forests ☐ Oregon White Oak ☐ Riparian ☐ Shrubsteppe ☐ Fresh Deepwater ☐ Instream ☐ Caves ☐ Cliffs ☐ Snags and Logs ☐ Talus		
The following criteria automatically score 2 points:		
☐ The wetland provides habitat for Threatened or Endangered species ☐ The wetland is mapped as a location for an individual WDFW priority species ☐ The wetland is a Wetland of High Conservation Value (WHCV) ☐ The wetland has been categorized as an important habitat site in a local plan		
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	Score: 1
Total for H 3:		1

Rating of Value

[] 2 = H [X] 1 = M [] 0 = L

Record the rating on the first page

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Vernal Pools

SC 1.1 Is the wetland less than 4000sqft and it meets at least two of the follow criteria?

- ☐ It's only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.
- ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals (if you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.)
- ☐ The soil in the wetland is shallow [<1ft (30cm) deep] and is underlain by an impermeable layer such as basalt or clay
- ☐ Surface water is present for less than 120 days during the wet season.

No - Not a Special Characteristic Vernal Pool

Result: Not a Special Characteristic Vernal Pool

SC 1.2 Is the vernal pool relatively undisturbed in February and March?

Result:

SC 1.3 Is the vernal pool in an area where there are at least 3 separate aquatic resources (other wetlands, rivers, lakes, etc.) within 0.5 mi?

Result:

SC 2.0 Alkali Wetlands

SC 2.1 Does the wetland meet any of the following criteria for Alkali Wetlands?

- ☐ The wetland has a conductivity >3.0 mS/cm
- ☐ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover is the wetland can be classified as "alkali" species
- ☐ 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.

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland meet two of the following criteria for Alkali Wetlands?

- ☐ Salt encrustations around more than 75% of the edge of the wetland
- ☐ more than 75% of the plant cover consists of alkali (salt tolerant) species
- ☐ A pH above 9.0

Result:

SC 3.0 Wetlands of High Conservation Value

SC 3.1 Is the wetland listed by Washington Natural Heritage Program (WNHP) as a Wetland of High Conservation Value (WHVC)?

No - Go to SC 3.2

Result: Go to SC 3.2

SC 3.2 Does the wetland have a rare plant species, rare plant community, or high-quality plant community that may qualify the site as a WHCV?

No - Not a Special Characteristic Wetland of High Conservation Value

Result: Not a Special Characteristic Wetland of High Conservation Value

SC 4.0 Bogs and Calcareous Fens	
SC 4.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?	
No - Go to SC 4.2	Result: Go to SC 4.2
SC 4.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16in deep over debrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pong?	
No - Not a Special Characteristic Bog	Result: Not a Special Characteristic Bog
SC 4.3 Does an area with peats or mucks have more than 70% cover of mosses at gorund level, AND at least 30% cover of plant species listed?	
	Result:
SC 4.4 Is an area with peats or mucks forested (>30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine AND any of the species (or combination of species) listed provide more than 30% of the cover under the canopy?	
	Result:
SC 4.5 Do the species listed comprise at least 20% of the total plant cover within an area of peats and mucks?	
	Result:
SC 4.6 Do the species listed 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?	
☐ Marl deposits [calcium carbonate (CaCO3) precipitate] occur on the soil surface or plant stems ☐ The pH of free water is >= 6.8 AND electrical conductivity is >= 200 uS/cm at multiple locations within the wetland	
	Result:
SC 5.0 Forested Wetlands	
SC 5.1 Does the wetland have an area of forest rooted within its boundary that meets at least one of the following criteria?	
☒ The wetland is within the 100 year floodplain of a river or stream ☐ Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species ☐ There is at least 0.25ac of trees (even in wetlands smaller than 2.5ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW	
Yes - Go to SC 5.2	Result: Go to SC 5.2
SC 5.2 Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees?	
No - Go to SC 5.3	Result: Go to SC 5.3
SC 5.3 Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover of woody species?	
No - Go to SC 5.4	Result: Go to SC 5.4
SC 5.4 Does the wetland have at least 0.25ac with a forest canopy where more than 50% of the tree species (by cover) are fast growing species?	
No - Go to SC 5.5	Result: Go to SC 5.5
SC 5.5 Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
No - Not a Special Characteristic Forested Wetland	Result: Not a Special Characteristic Forested Wetland
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	Special Characteristics Category: Not Applicable

Wetland name or number: WT6

RATING SUMMARY - Eastern Washington

Name of wetland (or ID#): WT6 Date of site visit: 10/06/2025
Rated By: Katie Pyne Trained by Ecology? Yes [X] No [] Date of Training: 10/23/2024
HGM Class used for rating: Depressional
Wetland has multiple HGM classes? Yes [] No [X]

NOTE: Form is not complete without the figures requested (figures can be combined).
Source of base aerial photo/map: NAD83

OVERALL WETLAND CATEGORY: [Category III] (based on functions [X] or special characteristics [])

1. Category of wetland based on FUNCTIONS

- [] Category I - Total score = 22 - 27
- [] Category II - Total score = 19 - 21
- [X] Category III - Total score = 16 - 18
- [] Category IV - Total score = 9 - 15

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H 6 = M,M,M
8 = H,H,M 5 = H,L,L
7 = H,H,L 5 = M,M,L
7 = H,M,M 4 = M,L,L
6 = H,M,L 3 = L,L,L

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	M	M	L	
Landscape Potential	M	M	H	
Value	H	L	M	Total
Score Based on Ratings	7	5	6	18

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Vernal Pool	
Alkali	
Wetland of High Conservation Value	
Bog	
Calcareous Fen	
Forested	
None of the above	Not Applicable

Maps and figures required to answer questions correctly for Depressional Wetlands

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

DEPRESSIONAL AND FLATS WETLANDS**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0 Does the site have the potential to improve water quality?****D 1.1** What are the characteristics of surface water outflows from the wetland?

Wetland has an intermittently flowing outlet

points = 3

Score: 3**D 1.2** Is the soil 2 in. below the surface a true clay or organic soil?

None of the above

points = 0

Score: 0**D 1.3** What are the characteristics and distribution of persistent plants?

Wetland has persistent, ungrazed, vegetation for >66% of the wetland area

points = 5

Score: 5**D 1.4** What are the characteristics of seasonal ponding or inundation in the wetland area?

Area seasonally ponded is 25%-50% total area of wetland

points = 1

Score: 1**Total for D 1:****9****Rating of Site Potential**

[] 12-16 = H [X] 6-11 = M [] 0-5 = L

*Record the rating on the first page***D 2.0 Does the landscape have the potential to support the water quality function of the site?****D 2.1** Does the wetland unit receive stormwater discharges?

Yes

points = 1

Score: 1**D 2.2** Is >10% of the area within 150ft of the wetland in land uses that generate pollutants?

No

points = 0

Score: 0**D 2.3** Are there septic systems within 250ft of the wetland?

No

points = 0

Score: 0**D 2.4** Are the other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?

No

points = 0

Score: 0**D 2.5** What are the other sources of pollutants coming into the wetland?**Total for D 2:****1****Rating of Landscape Potential**

[] 3-4 = H [X] 1-2 = M [] 0 = L

*Record the rating on the first page***D 3.0 Is the water quality improvement provided by the site valuable to society?****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?

No

points = 0

Score: 0**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]?

No

points = 0

Score: 0**D 3.3** Has the site been identified in a watershed or local plan as important for maintaining water quality?

Yes

points = 2

Score: 2**Total for D 3:****2****Rating of Value**

[X] 2-4 = H [] 1 = M [] 0 = L

Record the rating on the first page

DEPRESSIONAL WETLANDS**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation**D 4.0 Does the site have the potential to reduce flooding and erosion?****D 4.1** What are the characteristics of surface water outflows from the wetland?

Wetland has an intermittently flowing outlet

points = 4

Score: 4**D 4.2** What is the depth of storage during the wet periods?

Seasonal ponding: 0.5ft - <1ft

points = 2

Score: 2**Total for D 4:****6****Rating of Site Potential**

[] 12-16 = H [X] 6-11 = M [] 0-5 = L

Record the rating on the first page

Wetland name or number:

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?**D 5.1** Does the wetland unit receive stormwater discharges?

Yes

points = 1

Score: 1**D 5.2** Is >10% of the area within 150ft of the wetland in a land use that generates runoff?

No

points = 0

Score: 0**D 5.3** Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

No

points = 0

Score: 0**Total for D 5:****1****Rating of Landscape Potential**

[] 3 = H [X] 1-2 = M [] 0 = L

*Record the rating on the first page***D 6.0 Are the hydrologic functions provided by the site valuable to society?****D 6.1** Is the wetland in a landscape that has flooding problems?

There are no problems with flooding downstream of the wetland

points = 0

Score: 0**D 6.2** Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

No

points = 0

Score: 0**Total for D 6:****0****Rating of Value**

[] 2-4 = H [] 1 = M [X] 0 = L

Record the rating on the first page

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- ☐ Aquatic Bed
☐ Emergent plants 0-12in (0-30cm) high are the highest layer and have >30% cover
☐ Emergent plants >12-40in (>30-100cm) high are the highest layer with >30% cover
☒ Emergent plants >40in (>100cm) high are the highest layer with >30% cover
☒ Scrub-shrub (areas where shrubs have >30% cover)
☐ Forested (areas where trees have >30% cover)

2 structures

points = 1

Score: 1

H 1.2 Is one of the vegetation types Aquatic Bed?

No

points = 0

Score: 0

H 1.3 What is the surface water potential?

- ☐ The wetland has areas of open water (without emergent or shrub plants) that meet the scoring threshold during March to early June OR in August to the end of September
☐ The wetland has an intermittent or permanent, and unvegetated stream within its boundaries, or along one side
☐ The wetland is along the side of a stream or river with an unvegetated area that is at least 16ft (5m) wide
☐ The wetland is a Lake Fringe wetland

No surface water that meets criteria

points = 0

Score: 0

H 1.4 What is the richness of plant species in the wetland?

4-9 species

points = 1

Score: 1

H 1.5 What is the interspersation of habitats within the wetland?

Moderate

points = 2

Score: 2

H 1.6 What are the special habitat features within the wetland?

- ☐ Loose rocks larger than 4in OR large, downed, woody debris (>4in in diameter) within the area of surface ponding or in a stream.
☐ Cattails or bulrushes are present within the wetland.
☐ Standing snags (diameter at the bottom >4in) in the wetland or within 30m (100ft) of the edge.
☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded
☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) or signs of recent beaver activity.
☒ Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

1 habitat feature selected

points = 1

Score: 1**Total for H 1:****5****Rating of Site Potential**

[] 15-18 = H [] 7-14 = M [X] 0-6 = L

Record the rating on the first page

Wetland name or number: WT6

H 2.0 Does the landscape have the potential to support the habitat functions of the site?		
H 2.1 What is the percentage of accessible habitat within 1km of the wetland?		
20-30% of 1km Polygon is accessible habitat	points = 2	Score: 2
H 2.2 What is the total habitat in a 1km polygon around the wetland?		
Total habitat is 10-50% of the 1km polygon and in 1-3 patches	points = 2	Score: 2
H 2.3 What is the land use intensity in a 1km polygon within the wetland?		
<50% of the polygon is high intensity land use	points = 0	Score: 0
H 2.4 Is the wetland in an area where annual rainfall is less than 12in, and its water regime is not influenced by irrigation practices, dams, or water control structures?		
No	points = 0	Score: 0
Total for H 2:		4

Rating of Landscape Potential

[X] 4-6 = H [] 1-3 = M [] 0 = L

Record the rating on the first page

H 3.0 Is the habitat provided by the site valuable to society?		
H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?		
☐ Aspen Stands ☐ Biodiversity Areas and Corridors ☐ Eastside Steppe ☐ Inland Dunes ☐ Juniper Savannah ☐ Old-growth/Mature Forests ☐ Oregon White Oak ☐ Riparian ☐ Shrubsteppe ☐ Fresh Deepwater ☐ Instream ☐ Caves ☐ Cliffs ☐ Snags and Logs ☐ Talus		
The following criteria automatically score 2 points:		
☐ The wetland provides habitat for Threatened or Endangered species ☐ The wetland is mapped as a location for an individual WDFW priority species ☐ The wetland is a Wetland of High Conservation Value (WHCV) ☐ The wetland has been categorized as an important habitat site in a local plan		
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	Score: 1
Total for H 3:		1

Rating of Value

[] 2 = H [X] 1 = M [] 0 = L

Record the rating on the first page

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Vernal Pools

SC 1.1 Is the wetland less than 4000sqft and it meets at least two of the follow criteria?

- ☐ It's only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.
- ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals (if you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.)
- ☐ The soil in the wetland is shallow [<1ft (30cm) deep] and is underlain by an impermeable layer such as basalt or clay
- ☐ Surface water is present for less than 120 days during the wet season.

No - Not a Special Characteristic Vernal Pool

Result: Not a Special Characteristic Vernal Pool

SC 1.2 Is the vernal pool relatively undisturbed in February and March?

Result:

SC 1.3 Is the vernal pool in an area where there are at least 3 separate aquatic resources (other wetlands, rivers, lakes, etc.) within 0.5 mi?

Result:

SC 2.0 Alkali Wetlands

SC 2.1 Does the wetland meet any of the following criteria for Alkali Wetlands?

- ☐ The wetland has a conductivity >3.0 mS/cm
- ☐ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover is the wetland can be classified as "alkali" species
- ☐ 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.

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland meet two of the following criteria for Alkali Wetlands?

- ☐ Salt encrustations around more than 75% of the edge of the wetland
- ☐ more than 75% of the plant cover consists of alkali (salt tolerant) species
- ☐ A pH above 9.0

No - Not a Special Characteristic Alkali Wetland

Result: Not a Special Characteristic Alkali Wetland

SC 3.0 Wetlands of High Conservation Value

SC 3.1 Is the wetland listed by Washington Natural Heritage Program (WNHP) as a Wetland of High Conservation Value (WHVC)?

No - Go to SC 3.2

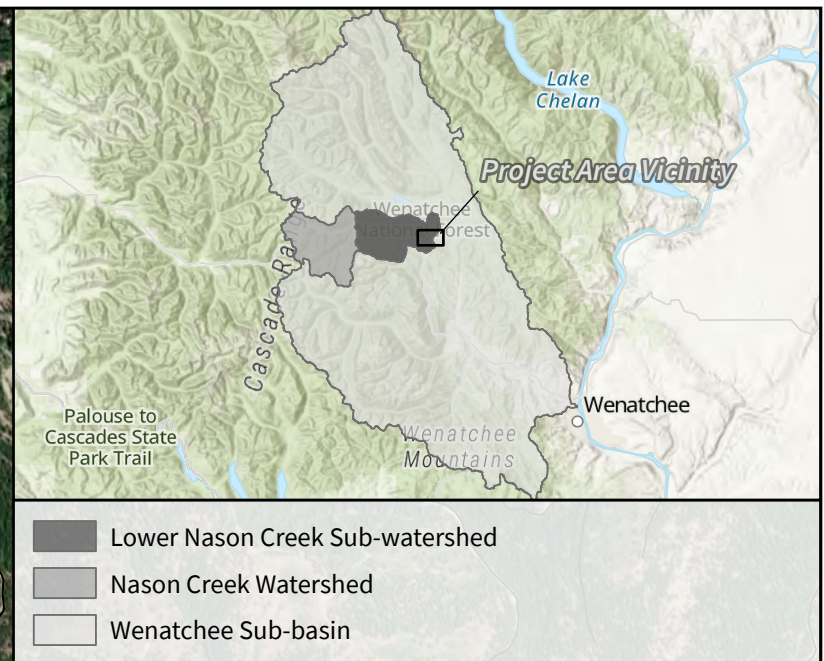
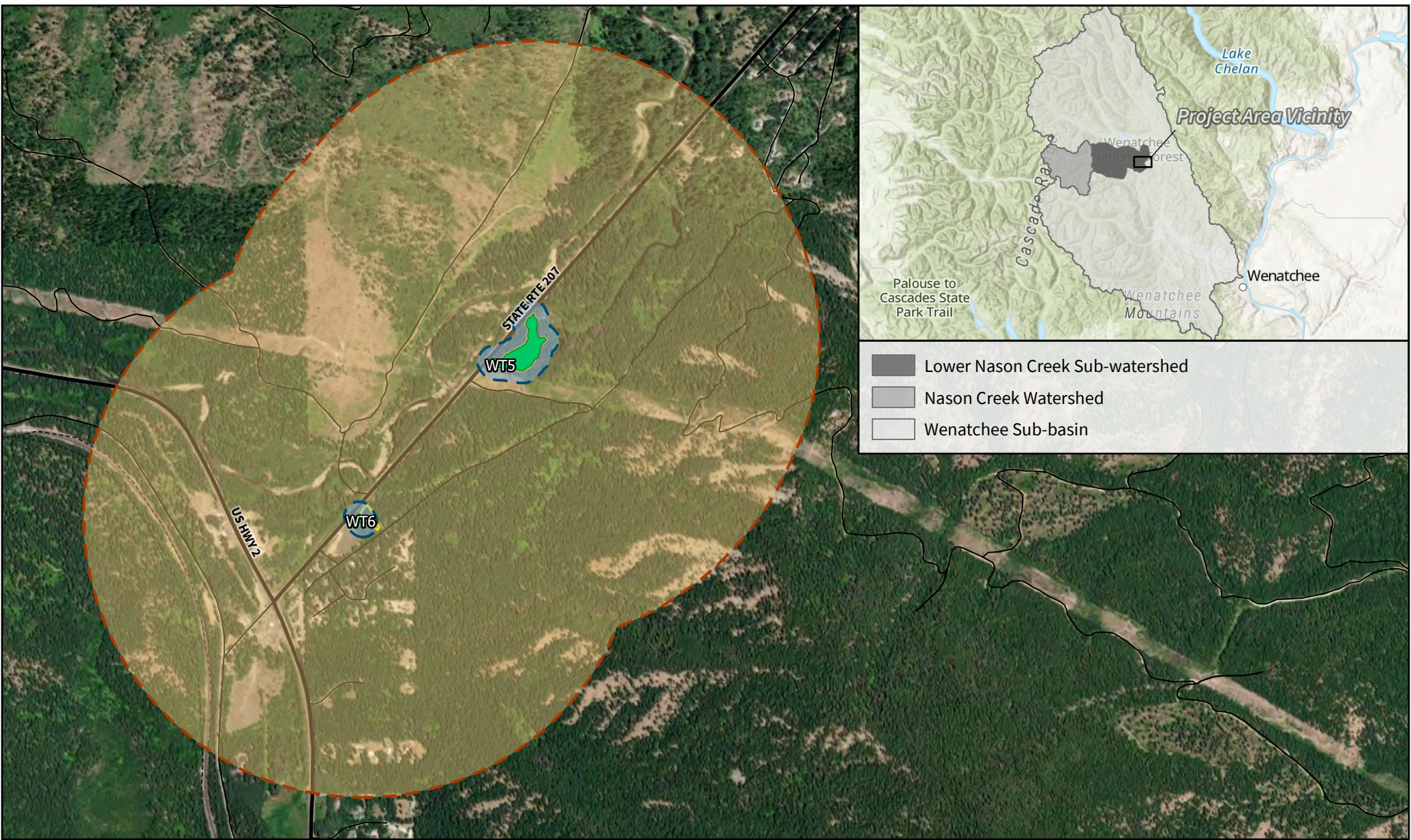
Result: Go to SC 3.2

SC 3.2 Does the wetland have a rare plant species, rare plant community, or high-quality plant community that may qualify the site as a WHCV?

No - Not a Special Characteristic Wetland of High Conservation Value

Result: Not a Special Characteristic Wetland of High Conservation Value

SC 4.0 Bogs and Calcareous Fens	
SC 4.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?	
No - Go to SC 4.2	Result: Go to SC 4.2
SC 4.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16in deep over debrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pong?	
No - Not a Special Characteristic Bog	Result: Not a Special Characteristic Bog
SC 4.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed?	
	Result:
SC 4.4 Is an area with peats or mucks forested (>30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine AND any of the species (or combination of species) listed provide more than 30% of the cover under the canopy?	
	Result:
SC 4.5 Do the species listed comprise at least 20% of the total plant cover within an area of peats and mucks?	
	Result:
SC 4.6 Do the species listed 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?	
☐ Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems ☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland	
	Result:
SC 5.0 Forested Wetlands	
SC 5.1 Does the wetland have an area of forest rooted within its boundary that meets at least one of the following criteria?	
☐ The wetland is within the 100 year floodplain of a river or stream ☐ Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species ☐ There is at least 0.25ac of trees (even in wetlands smaller than 2.5ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW	
No - Not a Special Characteristic Forested Wetland	Result: Not a Special Characteristic Forested Wetland
SC 5.2 Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees?	
	Result:
SC 5.3 Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover of woody species?	
	Result:
SC 5.4 Does the wetland have at least 0.25ac with a forest canopy where more than 50% of the tree species (by cover) are fast growing species?	
	Result:
SC 5.5 Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
	Result:
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	Special Characteristics Category: Not Applicable



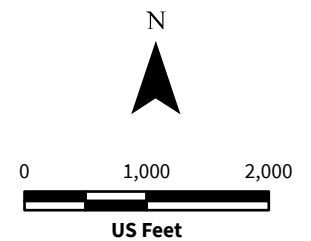
Nason Creek SR207 Realignment and Habitat Restoration Project Wetland Delineation

Wetland Rating Form
Figure 1
Buffers



Legend

- | | |
|--|---|
|  Wetland Survey Areas |  Mapped Wetland - 150ft Buffer |
|  Major Roads |  Mapped Wetland - 1km Buffer |
|  Local Roads | |
|  Mapped Wetland | |



Aerials - ESRI, Maxar

NOT FOR CONSTRUCTION



WT5
HGM: Seasonally Pondered
Cowardin Class: PSS
Acreage: 3.68 acres

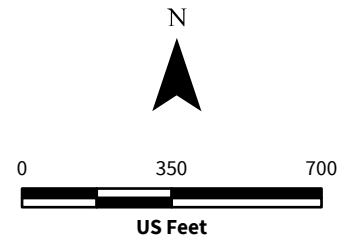
WT6
HGM: Seasonally Pondered
Cowardin Class: PEM
Acreage: 0.16 acres

Legend

-  Wetland Survey Areas
-  Major Roads
-  Local Roads
-  Mapped Wetland

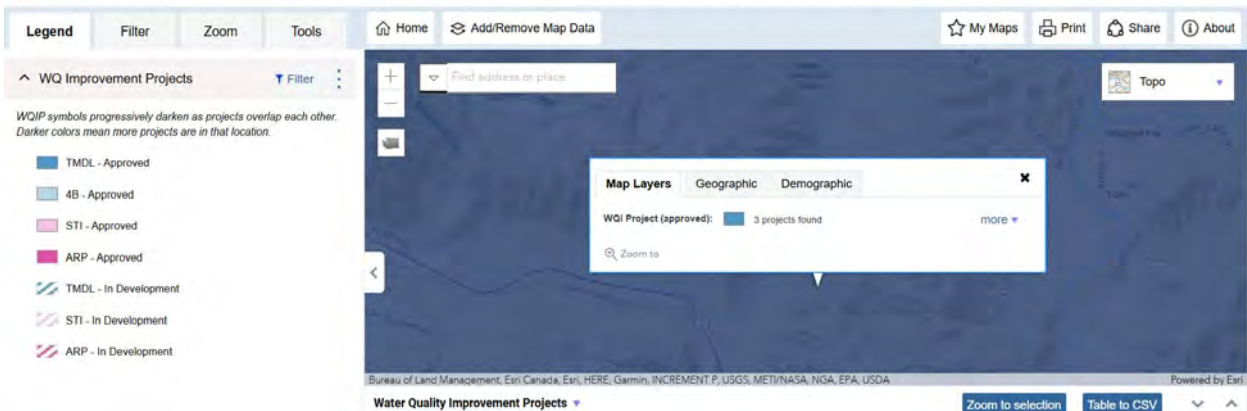
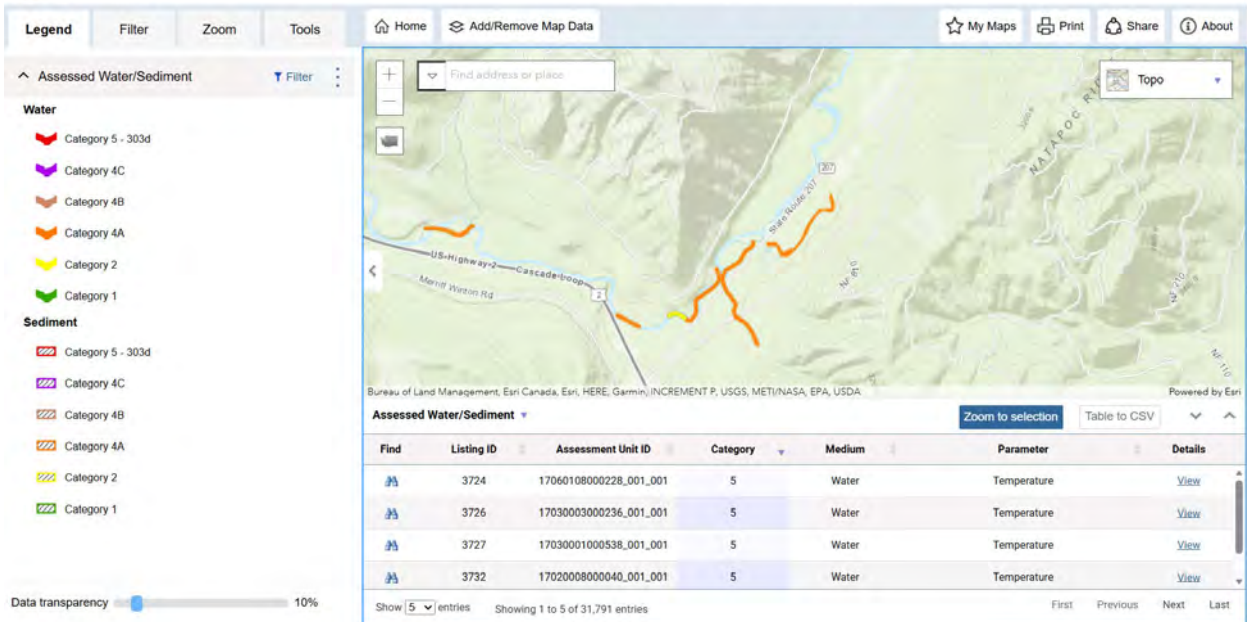
**Nason Creek SR207 Realignment
and Habitat Restoration Project
Wetland Delineation**

Wetland Rating Form
Figure 2
**Delineated
Wetlands**



Aerials - ESRI, Maxar
Delineated Data - Sub-meter grade GPS devices
were used to collect real-time, sub-meter GNSS data.

NOT FOR CONSTRUCTION



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Appendix B. Wetlands and Other Waters Photolog



Photopoint 1. Wetland (WT5) general conditions, observed standing water. Facing north.



Photopoint 2. Steep drop-off to wetland (WT5). Facing northeast.



Photopoint 3. Wetland (WT5) extends here, standing water. Facing northeast.



Photopoint 4. Wetland (WT5) general conditions, boundary matches previously mapped boundary. Facing east.



Photopoint 5. General conditions of upland. Facing northeast.



Photopoint 6. Looking into wetland (WT5). Facing southeast.



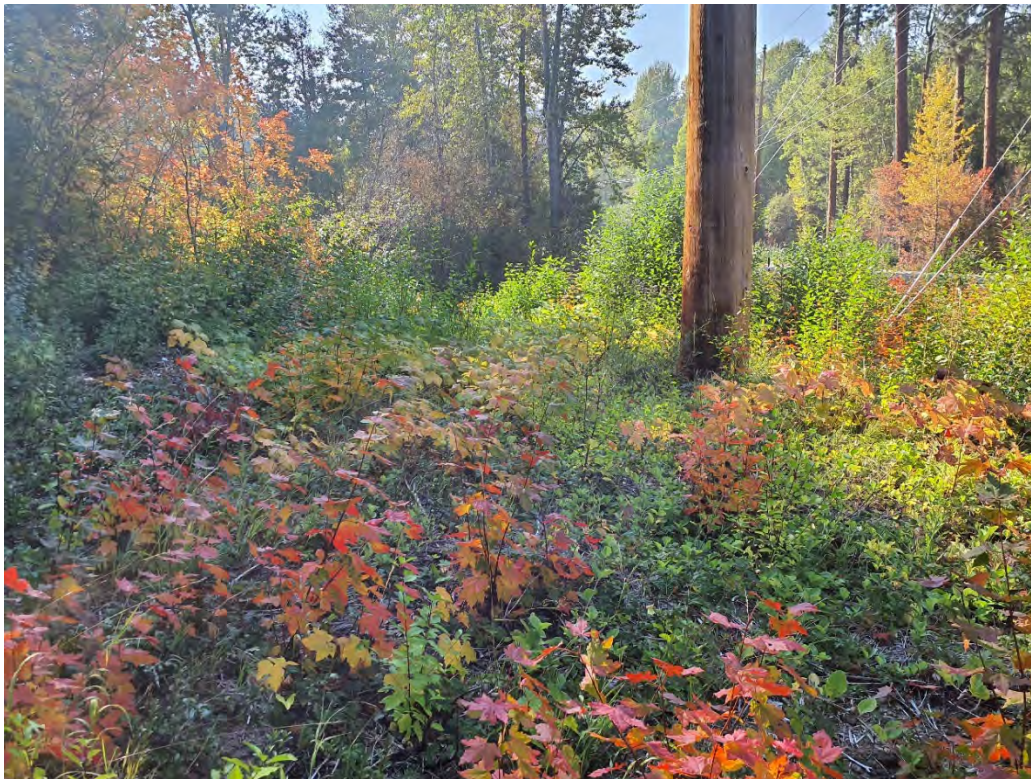
Photopoint 7. General conditions along road, upland. Facing northeast.



Photopoint 8. Wetland extends here. Facing south.



Photopoint 9. General conditions, no wetland. Facing southeast.



Photopoint 10. General conditions, no wetland. Facing southwest.



Photopoint 11. No wetland, upland vegetation and soils. Facing southeast.



Photopoint 12. Wetland (WT6) extends into private parcel. Facing southwest.



Photopoint 12. Culvert outlet, looking towards WT6. Facing south.

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