



Senn MP 0.89 Bridge Scour Project

Wetland and Stream Delineation Report

Submitted to:

Rodney Lakey
Lewis County
57 West Main Street
Chehalis, WA 98532

Prepared by:

Otak, Inc.
805 Broadway Street
Suite 130
Vancouver, WA 98660

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Executive Summary

The Lewis County Department of Public Works (County) is proposing to install scour countermeasures at the Senn Road milepost (MP) 0.89 Bridge spanning Lucas Creek (Lewis County Bridge No. 77) in unincorporated Lewis County. The 60-foot three span bridge was originally constructed in 1966 and is currently classified as scour critical.

The County requested Otak, Inc. (Otak) to identify, characterize, and delineate wetland and stream boundaries and assess wildlife habitat at the Senn Road and Lucas Creek crossing as part of the County's repair of Lewis County Bridge No. 77. This Wetland and Stream Delineation Report was completed for the project by reviewing background information, delineating wetland and stream boundaries in the field, classifying wetlands and stream habitats and assessing their functions, and determining buffer widths per the Lewis County Code (LCC) Chapter 17.38 (Critical Areas) and Shoreline Master Program at LCC 17.25. Critical areas covered in this report include wetlands, streams, and fish and wildlife habitat conservation areas (FWHCAs).

Otak biologists conducted field investigations on December 3 and 4, 2024. The study area for this report included areas along both sides of Senn Road and Lucas Creek, upstream and downstream of Bridge No. 77. Areas immediately beyond the study area were also visually assessed to identify any wetlands and streams with buffers that could extend into the study area.

Six wetlands (Wetlands 1 – 6) were identified in the study area. Per the hydrogeomorphic (HGM) classification system, Wetlands 1, 2, and 6 are depressional wetlands and Wetlands 3, 4, and 5 are riverine wetlands. All six wetlands were rated as Category III wetlands per the *Washington State Wetland Rating System for Western Washington – 2014 Update Version 2.0* (Hruby and Yhanke 2023). All six wetlands have a standard buffer width of 75 feet per LCC 17.38.270 (Required wetland buffers) based on category, habitat score, and impact intensity.

Three streams (Lucas Creek, Tributary 1, and Tributary 2) were identified in the study area. Lucas Creek is a Type S (Shoreline of the State) stream with an assigned buffer of 0 feet per the Lewis County Shoreline Master Program (Table 4-1, Section 4.04.02). Tributary 1 is located along the east side of Senn Road and enters Lucas Creek east of Lewis County Bridge No. 77 from the south. Tributary 1 is a perennial Type F (Fish Habitat) stream with an assigned buffer of 100 feet per Table 17.38-6 in LCC 17.38.420 (Fish and Wildlife Habitat Conservation Areas – Designations). Tributary 2 is an intermittent Type Ns (Seasonal, Non-fish Habitat) stream located to the east of Lucas Creek. Tributary 2 enters Lucas Creek from the east through Wetland 3. Tributary 2 has an assigned buffer of 75 feet per Table 17.38-6 in LCC 17.38.420 (Fish and Wildlife Habitat Conservation Areas – Designations).

The project is located within the 100-year floodplain of Lucas Creek. The study area falls within Rural Conservancy Shoreline Environment Designation per the Lewis County Shoreline Master Program.

Table of Contents

	Page
Section 1. Introduction	1
1.1. Project Location and Landscape Setting	1
1.2. Project Description	1
Section 2. Methods	2
2.1. Review of Available Published Information	2
2.2. Precipitation Data and Analysis	3
2.3. Field Investigation	4
2.4. Wetland and Stream Classification and Ratings	5
2.5. Mapping Methods	6
Section 3. Existing Conditions	6
3.1. Delineated Wetlands	6
3.2. Wetland Functions, Ratings, and Buffer Widths	13
3.3. Delineated Watercourses and Riparian Buffers	13
Section 4. Regulatory Summary	17
4.1. U.S. Army Corps of Engineers	17
4.2. Washington State Department of Fish and Wildlife	17
4.3. Washington State Department of Ecology	17
4.4. Local Jurisdiction – Lewis County	17
Section 5. References	18

TABLES

Table 2-1 – NRCS Soil Units Mapped in Study Area	2
Table 3-1—Delineated Wetlands	6
Table 3-2—Wetland 1 Summary	7
Table 3-3—Wetland 2 Summary	8
Table 3-4—Wetland 3 Summary	9
Table 3-5—Wetland 4 Summary	10
Table 3-6—Wetland 5 Summary	11
Table 3-7—Wetland 6 Summary	12
Table 3-8—Summary of Wetland Functions	13
Table 3-9—Delineated Watercourses	14
Table 3-10—Lucas Creek Summary	14
Table 3-11—Tributary 1 Summary	15
Table 3-12—Tributary 2 Summary	16

APPENDICES

Appendix A Methods and Tools

Table A-1 – Methods and Tools Used to Prepare the Report

Appendix B Project Figures and Background Information

Figure 1: Vicinity Map

Figure 2: Study Area

Figure 3: USGS Topo Map

Figure 4: National Wetland Inventory

Figure 5: NRCS Soil Survey

Figure 6: Lewis County Critical Areas Inventory

Figure 7: Lewis County Shoreline Designation

Figure 8: Delineated Wetlands, Streams, and Buffers

Appendix C Wetland Determination Forms

Appendix D Wetland Rating Forms and Figures

Appendix E Site Photos

Section 1. Introduction

Lewis County (County) requested Otak, Inc. (Otak) to identify, characterize, and delineate wetlands and streams and assess wildlife habitat for the County's repair of Lewis County Bridge No. 77. This Wetland and Stream Delineation Report was completed along the road right-of-way, Lucas Creek, and potential access and staging areas by reviewing background information, delineating wetland and stream boundaries in the field, classifying wetlands and stream habitats and assessing their functions, and determining buffer widths per the Lewis County Code (LCC) Chapter 17.38 (Critical Areas) and the Lewis County Shoreline Management Program (LCC 17.25)(Lewis County 2021). This Wetland and Stream Delineation Report has been prepared in accordance with county, state, and federal standards to document baseline conditions regarding frequently flooded areas, wetlands, streams, and fish and wildlife habitat conservation areas (FWHCAs).

1.1. Project Location and Landscape Setting

The proposed project is located on Senn Road at the crossing of Lucas Creek in unincorporated Lewis County, Washington (Appendix B: Figure 1—Vicinity Map). It is located in Section 2, Township 13 North, Range 1 West, in Water Resource Inventory Area (WRIA) 23 – Upper Chehalis. The project area generally includes areas along Senn Road within 100 feet of the Lucas Creek bridge. Land abutting the study area includes agricultural and forested areas. Lucas Creek flows through the project area from northeast to southwest passing under Senn Road at milepost (MP) 0.89. The project area is entirely within the 100-year floodplain of Lucas Creek.

1.2. Project Description

The County is proposing to install scour countermeasures at Lewis County Bridge No. 77 in unincorporated Lewis County. The 60-foot three span bridge was originally constructed in 1966 and is currently classified as scour critical. The project intends to complete necessary repairs to the bridge in order to maintain vehicular access and protect public safety along Senn Road.

Section 2. Methods

This chapter summarizes the methods used in accordance with local, state, and federal guidance in delineating wetland and stream boundaries in Washington State. See Table A-1 in Appendix A for further details regarding the methods used to produce this report.

2.1. Review of Available Published Information

Available published information was reviewed prior to the field investigation to identify any previously documented wetlands, streams, or other pertinent site characteristics (e.g., vegetation community patterns, topography, soils, or water courses) that would indicate the presence of wetlands, streams and other critical areas within the project site. These maps are typically used as guidance, and do not supersede conditions in the field. As part of this effort Otak biologists reviewed the following sources:

- Soil survey from the United States Natural Resources Conservation Service (NRCS) (NRCS 2025a);
- National Wetlands Inventory (NWI) map (USFWS 2025a);
- United States Geological Survey (USGS) topographic maps (USGS 2025)
- Washington Department of Natural Resources (WDNR) Forest Practices Application Mapping Tool (WDNR 2025);
- Lewis County GIS Web Map (Lewis County 2025a);
- Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) maps (WDFW 2025a);
- Statewide Washington Integrated Fish Distribution Map (SWIFD) (WDFW 2025b);
- U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation Tool (IPaC) (USFWS 2025b).

Appendix B contains figures associated with the background review, including: an aerial photograph of the study area (Figure 2), USGS Topographic map (Figure 3), NWI map (Figure 4), NRCS Soils map (Figure 5), Lewis County Critical Areas Inventory (Figure 6), and Lewis County Shoreline Environment Designations (Figure 7).

Soil units mapped within the study area include one soil series: Chehalis silty clay (Table 2-1)(Figure 5). Major soil components of the map unit soil series are classified non-hydric. Minor components of the soil series are classified as hydric.

Table 2-1 – NRCS Soil Units Mapped in Study Area.

Mapped Soil Unit	Slope %	Drainage Class	Landform	Parent Material	Hydric?
Chehalis silty clay	0-3	Well drained	Flood Plains and Terraces	Alluvium	No (10% hydric minor components)

The NWI map identifies the Lucas Creek corridor as a seasonally flooded palustrine forested (PFOC) wetland through the study area. Two areas of permanently flooded, unconsolidated bottom, unknown perennial riverine (R5UBH) habitat are also mapped in the study area along tributaries to Lucas Creek.

The WDNR Forest Practices Application Mapping Tool maps Lucas Creek as a Type S (Shoreline of the State) waterbody, a stream along the east side of Senn Road (Tributary 1) as a Type F (Fish Habitat) waterbody, and a stream entering Lucas Creek from the east (Tributary 2) as a Type N (Non-fish Habitat)

waterbody. Wetlands are mapped by Lewis County in the study area along Lucas Creek. Species identified by the WDFW PHS mapper include occurrence, migration, and breeding of rainbow trout and steelhead (*Oncorhynchus mykiss*), occurrence and breeding of Chinook salmon (*Oncorhynchus tshawytscha*), occurrence and migration of resident coastal cutthroat (*Oncorhynchus clarki*), and occurrence and breeding of coho salmon (*Oncorhynchus kisutch*) in Lucas Creek. The WDFW PHS mapper also identified occurrence and migration of rainbow trout and steelhead and occurrence and migration of coho salmon in Tributary 1.

Regarding species listed under the Endangered Species Act (ESA), the USFWS IPaC tool maps the potential presence of marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophila alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*), northwestern pond turtle (*Actinemys marmorata*), bull trout (*Salvelinus confluentus*), monarch butterfly (*Danaus plexippus*), Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*) and Kincaid's lupine (*Lupinus sulphureus ssp. kincaidii*). However, suitable habitats for these ESA-listed species do not occur in the study area and no designated critical habitats for ESA-listed species are mapped at this location.

2.2. Precipitation Data and Analysis

2.2.1. Evaluation of Growing Season

Wetland hydrologic conditions are considered present if soils are inundated or saturated to the surface continuously for at least 5 percent of the growing season in most years (50 percent probability of recurrence) (USACE 1987). The technical standard for disturbed or problematic sites requires 14 or more consecutive days of flooding or ponding, or a water table 12 inches or less below the soil surface, during the growing season, at a minimum frequency of 5 years in 10 (USACE 2010).

The beginning and ending dates of the growing season can be defined based on two indicators of biological activity that are readily observable in the field: (1) above ground growth and development of vascular plants, and (2) soil temperature. However, due to seasonal fluctuations from year to year the growing season dates may also be approximated by the number of frost-free days, defined as the time from the last date in spring when the ambient air temperature drops to 28°F, to the first date in fall when it drops to 28°F, over a 30-year period (USACE 2010).

Due to insufficient data, the beginning and ending dates for the growing season for the project site were not estimated from long-term weather records (1994-2023) at the Mayfield Power Plant Climate Station as the median dates (70 percent probability) for the first and last 28°F days. The estimated dates corresponding with the growing season are based on historical climate data and information obtained from the nearest climate station with sufficient data. The nearest climate station with complete monthly precipitation data for the 30-year period prior to the site visit is the Centralia Climate Station (NRCS 2025b). Based on long-term weather records at this station, the average start and end dates for the growing season for the area are March 23 and November 15, respectively, for a total growing season of 237 days (NRCS 2025b). As such, continuing wetland hydrologic conditions must be present for at least 12 consecutive days during the growing season for this site.

2.2.2. Precipitation Data during Field Investigation

The field survey for the project was conducted on December 3 and 4, 2024. The area received 3.51 inches of precipitation in the two-week period (November 18 – December 2) prior to the field survey as measured at the Mayfield Power Plant Climate Station (NRCS 2025c). The Mayfield Power Plant Climate Station was used to evaluate recent precipitation during the field visit because the Centralia Climate Station did not have recent data available. Precipitation amounts for the three months preceding the field

survey were normal in September 2024, above normal in October 2024, and normal in November 2024 (Table 2-2) as measured at the Mayfield Power Plant Climate Station.

Table 2-2—Summary of Precipitation Data from September 1 to November 30, 2024

Category	September 2024	October 2024	November 2024
Recorded Precipitation (inches)	1.40	5.38	7.57
Precipitation Average	1.63	4.01	6.59
30-70% Normal Range (inches) from 1995-2024	0.61 – 1.92	2.94 – 4.72	4.17 – 7.80
Comparison to Normal Range	Normal	Above Normal	Normal

Source: NRCS 2025c.

2.3. Field Investigation

Wetland and stream boundaries were delineated in the field by Otak biologists on December 3 and 4, 2024. Wetland boundaries were marked with sequentially numbered pink wetland flagging. The OHWM of the streams were marked with sequentially numbered orange flagging.

2.3.1. Wetlands

The delineation was conducted utilizing techniques published in the *1987 US Army Corps of Engineers Wetlands Delineation Manual* (USACE 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE 2010). Following routine methodology, data on vegetation, soils, and hydrology were collected at paired (wetland/upland) data points. Wetland determination data forms are provided in Appendix C.

Vegetation

Representative upland and wetland vegetation communities were documented during the field survey. Typically, three vegetation strata are inventoried including trees within a 30-foot diameter plot, shrubs within a 15-foot diameter plot, and non-woody herbaceous plants (including forbs, grasses, sedges, and rushes) within a 5-foot diameter plot. Plant species in each stratum were identified and absolute percent cover was visually assessed. Each species was listed following the scientific nomenclature given in the United States Department of Agriculture (USDA) PLANTS database (NRCS 2025d). The wetland indicator status for each species was assigned using the *2022 National Wetland Plant List for the Western Mountains, Valleys & Coast Region* (USACE 2022).

The dominance test was the primary indicator used to determine the presence or absence of hydrophytic vegetation. A data point is considered to have a hydrophytic vegetation community if more than 50 percent of the dominant species have an indicator status of facultative (FAC), facultative-wetland (FACW), or obligate (OBL). Dominant species are defined as those that individually or collectively account for more than 50 percent of the total areal coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total areal coverage (USACE 2010). If more than 50 percent of the dominant plant species in a community have wetland indicator status of OBL, FACW, or FAC, then the plant community is considered hydrophytic (wetland).

Soils

Per USACE protocol, soil samples were obtained at representative data points by digging a pit to a depth of at least 18 inches (if possible). The Field Indicators of Hydric Soils in the United States, Version 9.0 (NRCS 2024) was used to determine the presence or absence of hydric soil. Soil colors were evaluated using a Munsell® soil color chart (Munsell Color 2010) to distinguish hydric from non-hydric soils. Soils were textured using the Guide to Texture by Feel chart (NRCS 2022).

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USACE 2010). Hydric soils may exhibit certain characteristics that can be observed in the field, such as: high organic content, accumulation of sulfidic material, greenish or bluish-gray color (gleyed formation), depleted matrices, and development of redoximorphic features.

Hydrology

Wetland hydrologic conditions are considered present if, during the growing season, an area has 14 or more consecutive days of flooding or ponding; or a water table 12 inches or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (USACE 1987 and 2010). The presence of primary and secondary wetland hydrologic indicators was determined at each wetland data point.

Primary indicators of wetland hydrology may include, but are not limited to, surface water, soil saturation within 12 inches of the surface, shallow water table, and evidence of previous water inundation or saturation (e.g., watermarks, algal mats, sediment deposits). Secondary indicators may include wetland drainage patterns, geomorphic position, stunted or stressed plants, and water-stained leaves. When at least one primary or two secondary indicators were observed, wetland hydrology was determined to occur during the growing season long enough to result in wetland hydrology conditions.

2.3.2. Ordinary High-Water Mark

The OHWM along streams within the study area were determined in the field based on the methodology outlined in *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (USACE 2025) and *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Ecology 2016). Identification of OHWM was based on the evaluation of stream physical characteristics, such as: presence of bed and banks, a natural line impressed on the bank, change in sediment and vegetation characteristics, wracking, erosion/scour, and silt deposits.

2.3.3. Fish and Wildlife Habitat Conservation Areas

Fish and Wildlife Habitat Conservation Areas (FWHCAs) are regulated per LCC 17.38 Article 4. Regulated FWHCAs include Aquatic Priority Habitat, WDFW Priority Habitats and Species, Locally Important Habitats and Species, and Designated Wildlife Areas (LCC 17.38.420)(Lewis County 2025b). Presence of listed species was visually assessed on December 3 and 4, 2024, during the field visit by Otak biologists (USFWS 2025b).

2.4. Wetland and Stream Classification and Ratings

Wetlands were rated using the *Washington State Wetland Rating System for Western Washington* (Hruby and Yhanke 2023). Buffer widths were determined based on wetland category, habitat score, and impact intensity per Table 17.38-3 (Wetland Buffers) at LCC 17.38.270 (Lewis County 2025b). Wetland buffer conditions were qualitatively assessed based on vegetation cover, land use, and presence of invasive species.

Stream classifications were identified using WDNR’s Forest Practices Activity Mapping Tool (WDNR 2025) and classified in accordance with LCC 17.38.470 and the Shoreline Master Program at LCC 17.25 (Lewis County 2021 and 2025b). Buffer widths were determined according to LCC 17.38.470 (Fish and Wildlife Habitat Conservation Areas – Classification), 17.38-6 (Fish and Wildlife Habitat Conservation Areas – Regulated Areas), and the Lewis County Shoreline Master Program (Table 4-1, Section 4.04.02).

2.5. Mapping Methods

Sample points, wetland boundary flags, and OHWM flags were collected using traditional survey methods as part of the civil survey for engineering design. Survey data was converted to GIS files and imported to project maps for this report.

Section 3. Existing Conditions

3.1. Delineated Wetlands

Otak biologists identified and delineated six wetlands (Wetlands 1 – 6) in the study area as shown in Figure 8 in Appendix B.

Wetland classifications, ratings, sizes, and buffer widths are summarized in Table 3-1. Wetland profiles and photographs are provided in Tables 3-2 to 3-7. Wetland determination data forms are provided in Appendix C. Ecology rating forms and figures are provided in Appendix D. Additional site photographs are provided in Appendix E.

Table 3-1—Delineated Wetlands

Wetland ¹	Wetland Classification		Ecology Rating	Wetland Size (Acres)	Standard Buffer Width (feet) ⁵	Representative Data Sheets
	Cowardin ²	HGM ³	Category (Habitat Score) ⁴			
1	PSS, PEM	Depressional	III (6)	4.95	75	W1-DP1, W1-DP2
2	PEM	Depressional	III (6)	0.42	75	W2-DP1, W2-DP2
3	PEM	Riverine	III (6)	0.007	75	W3-DP1, W3-DP2
4	PEM	Riverine	III (6)	0.01	75	W4-DP1, W4-DP2
5	PEM	Riverine	III (6)	0.03	75	W5-DP1, W5-DP2
6	PEM	Depressional	III (6)	0.05	75	W6-DP1, W6-DP2

Note:

1. Wetlands shown on Figure 8 in Appendix B.
2. Cowardin et al. (1979). Habitat class based on vegetation: PSS = palustrine scrub-shrub, PEM = palustrine emergent.
3. HGM = Hydrogeomorphic class (Brinson 1993)
3. Wetlands rated according to Hruby and Yhanke 2023 (LCC 17.38.230).
4. Wetland standard buffer widths per LCC Table 17.38-3 Buffers (Lewis County 2025b).

Table 3-2—Wetland 1 Summary

WETLAND 1 – INFORMATION SUMMARY			
Location:		Field to the east of Senn Road and Tributary 1 and south of Lucas Creek	
		Local Jurisdiction	Lewis County
		WRIA	23 – Upper Chehalis
		Ecology Rating (Hruby & Yhanke 2023)	III (Habitat Score – 6)
		Buffer Width	75 feet
		Wetland Size	4.95 acres
		Cowardin Classification	PSS, PEM
		HGM Classification	Depressional
		Upland Data Sheet	W1-DP2
		Wetland Data Sheet	W1-DP1
		Flag color	Pink flagging
Dominant Vegetation	Slough sedge (<i>Carex obnupta</i>), soft rush (<i>Juncus effusus</i>) in PEM habitats. PSS habitat includes redosier dogwood (<i>Cornus sericea</i>) and salmonberry (<i>Rubus spectabilis</i>).		
Soils	Loam; Depleted Matrix of 10YR 4/2 with 7.5YR 4/6 redoximorphic concentrations in the matrix and pore linings to depth of 20 inches.		
Hydrology	Oxidized Rhizospheres along Living Roots, Water-Stained Leaves, Drainage Patterns, and FAC-Neutral Test		
Rationale for Delineation	Satisfies all three wetland criteria.		
Rationale for Local Rating	Follows Ecology rating system (Hruby & Yhanke 2023) per LCC 17.38.230 (Wetlands – Classification) (Lewis County 2025b).		
Wetland Functions Summary	Wetland 1 scored low to high for water quality functions. Wetland 1 scored moderate for hydrologic functions. Wetland 1 scored low to high for habitat function. A complete assessment of functions is provided in Appendix D.		

Table 3-3—Wetland 2 Summary

WETLAND 2 – INFORMATION SUMMARY			
Location:		Field to the west of Senn Road and south of Lucas Creek	
		Local Jurisdiction	Lewis County
		WRIA	23 – Upper Chehalis
		Ecology Rating (Hruby & Yhanke 2023)	III (Habitat Score – 6)
		Buffer Width	75 feet
		Wetland Size	0.42 acres
		Cowardin Classification	PEM
		HGM Classification	Depressional
		Upland Data Sheet	W2-DP2
		Wetland Data Sheet	W2-DP1
		Flag color	Pink flagging
Dominant Vegetation	Kentucky bluegrass (<i>Poa pratensis</i>) and soft rush		
Soils	Loam; 10YR 3/2 to depth of 2 inches. Below 2 inches depleted matrix of 10YR 4/2 with 7.5YR 4/6 redoximorphic concentrations in the matrix and pore linings. Saturated at 4 inches.		
Hydrology	Saturation, High Water Table, Oxidized Rhizospheres along Living Roots, Geomorphic Position, and FAC-Neutral Test		
Rationale for Delineation	Satisfies all three wetland criteria.		
Rationale for Local Rating	Follows Ecology rating system (Hruby & Yhanke 2023) per LCC 17.38.230 (Wetlands – Classification) (Lewis County 2025b).		
Wetland Functions Summary	Wetland 2 scored low to high for water quality functions. Wetland 2 scored moderate for hydrologic functions. Wetland 2 scored low to high for habitat function. A complete assessment of functions is provided in Appendix D.		

Table 3-4—Wetland 3 Summary

WETLAND 3 – INFORMATION SUMMARY			
Location:		Along east bank of Lucas Creek upstream of Senn Road crossing	
		Local Jurisdiction	Lewis County
		WRIA	23 – Upper Chehalis
		Ecology Rating (Hruby & Yhanke 2023)	III (Habitat Score – 6)
		Buffer Width	75 feet
		Wetland Size	0.007 acres
		Cowardin Classification	PEM
		HGM Classification	Riverine
		Upland Data Sheet	W3-DP2
		Wetland Data Sheet	W3-DP1
		Flag color	Pink flagging
Dominant Vegetation		Reed canarygrass (<i>Phalaris arundinacea</i>) and Sitka willow (<i>Salix sitchensis</i>)	
Soils		Loam; Depleted Matrix of 10YR 4/2 with 10YR 4/6 redoximorphic concentrations in the matrix to depth of 20 inches. Saturated at the soil surface. Soil mixed with approximately 40 percent gravel through the profile.	
Hydrology		Saturation, High Water Table, Geomorphic Position, and FAC-Neutral Test	
Rationale for Delineation		Satisfies all three wetland criteria.	
Rationale for Local Rating		Follows Ecology rating system (Hruby & Yhanke 2023) per LCC 17.38.230 (Wetlands – Classification) (Lewis County 2025b).	
Wetland Functions Summary		Wetland 3 scored moderate to high for water quality functions. Wetland 3 scored low to moderate for hydrologic functions. Wetland 3 scored low to high for habitat function. A complete assessment of functions is provided in Appendix D.	

Table 3-5—Wetland 4 Summary

WETLAND 4 – INFORMATION SUMMARY			
Location:		Along west bank of Lucas Creek upstream of Senn Road crossing	
		Local Jurisdiction	Lewis County
		WRIA	23 – Upper Chehalis
		Ecology Rating (Hruby & Yhanke 2023)	III (Habitat Score – 6)
		Buffer Width	75 feet
		Wetland Size	0.01 acres
		Cowardin Classification	PEM
		HGM Classification	Riverine
		Upland Data Sheet	W4-DP2
		Wetland Data Sheet	W4-DP1
		Flag color	Pink flagging
Dominant Vegetation	Reed canarygrass, slough sedge, and creeping buttercup (<i>Ranunculus repens</i>)		
Soils	Loam; Depleted Matrix of 10YR 4/1 with 7.5YR 4/6 redoximorphic concentrations in the matrix and pore linings to depth of 20 inches. Saturated at a depth of 8 inches.		
Hydrology	High Water Table, Saturation, Oxidized Rhizospheres along Living Roots, Geomorphic Position, and FAC-Neutral Test		
Rationale for Delineation	Satisfies all three wetland criteria.		
Rationale for Local Rating	Follows Ecology rating system (Hruby & Yhanke 2023) per LCC 17.38.230 (Wetlands – Classification) (Lewis County 2025b).		
Wetland Functions Summary	Wetland 4 scored moderate to high for water quality functions. Wetland 4 scored low to moderate for hydrologic functions. Wetland 4 scored low to high for habitat function. A complete assessment of functions is provided in Appendix D.		

Table 3-6—Wetland 5 Summary

WETLAND 5 – INFORMATION SUMMARY			
Location:		Along north bank of Lucas Creek downstream of Senn Road Crossing	
		Local Jurisdiction	Lewis County
		WRIA	23 – Upper Chehalis
		Ecology Rating (Hruby & Yhanke 2023)	III (Habitat Score – 6)
		Buffer Width	75 feet
		Wetland Size	0.03 acres
		Cowardin Classification	PEM
		HGM Classification	Riverine
		Upland Data Sheet	W5-DP2
		Wetland Data Sheet	W5-DP1
		Flag color	Pink flagging
Dominant Vegetation	Slough sedge and soft rush		
Soils	Clay loam; Depleted Matrix of 10YR 4/2 with 10YR 4/6 redoximorphic concentrations in the matrix and pore linings to depth of 20 inches. Saturated at the soil surface.		
Hydrology	High Water Table, Saturation, Oxidized Rhizospheres along Living Roots, Geomorphic Position, and FAC-Neutral Test		
Rationale for Delineation	Satisfies all three wetland criteria.		
Rationale for Local Rating	Follows Ecology rating system (Hruby & Yhanke 2023) per LCC 17.38.230 (Wetlands – Classification) (Lewis County 2025b).		
Wetland Functions Summary	Wetland 5 scored low to high for water quality functions. Wetland 5 scored low to moderate for hydrologic functions. Wetland 5 scored low to high for habitat function. A complete assessment of functions is provided in Appendix D.		

Table 3-7—Wetland 6 Summary

WETLAND 6 – INFORMATION SUMMARY			
Location:		Field to the west of Senn Road and north of Lucas Creek	
		Local Jurisdiction	Lewis County
		WRIA	23 – Upper Chehalis
		Ecology Rating (Hruby & Yhanke 2023)	III (Habitat Score – 6)
		Buffer Width	75 feet
		Wetland Size	0.05 acres
		Cowardin Classification	PEM
		HGM Classification	Depressional
		Upland Data Sheet	W6-DP2
		Wetland Data Sheet	W6-DP1
		Flag color	Pink flagging
Dominant Vegetation	Slough sedge, soft rush, velvetgrass (<i>Holcus lanatus</i>), and Kentucky bluegrass.		
Soils	Loam; 10YR 3/2 to depth of 2 inches. Below 2 inches depleted matrix of 10YR 4/2 with 10YR 4/6 redoximorphic concentrations in the matrix and pore to a depth of 18 inches.		
Hydrology	Oxidized Rhizospheres along Living Roots, Geomorphic Position, and FAC-Neutral Test		
Rationale for Delineation	Satisfies all three wetland criteria.		
Rationale for Local Rating	Follows Ecology rating system (Hruby & Yhanke 2023) per LCC 17.38.230 (Wetlands – Classification) (Lewis County 2025b).		
Wetland Functions Summary	Wetland 6 scored low to high for water quality functions. Wetland 6 scored low to moderate for hydrologic functions. Wetland 6 scored low to high for habitat function. A complete assessment of functions is provided in Appendix D.		

3.2. Wetland Functions, Ratings, and Buffer Widths

All 6 wetlands in the study area were determined to be Category III wetlands according to the *Washington State Wetland Rating System for Western Washington 2014 Update Version 2.0* (Hruby & Yhanke 2023). Table 3-8 summarizes the functions of each wetland. Complete rating forms and figures are provided in Appendix D. Wetland buffers have a standard 75-foot width, and have been reduced to intervening road edges where applicable in accordance with the contiguous vegetation requirement per LCC 17.10.020.

Table 3-8—Summary of Wetland Functions

Wetland	Functions	Site Potential Rating	Landscape Potential Rating	Societal Value Rating	Score	Total (Class)
Wetland 1	Water Quality	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	18 (III)
	Hydrologic	<i>Moderate</i>	<i>Moderate</i>	<i>Moderate</i>	6	
	Habitat	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	
Wetland 2	Water Quality	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	18 (III)
	Hydrologic	<i>Moderate</i>	<i>Moderate</i>	<i>Moderate</i>	6	
	Habitat	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	
Wetland 3	Water Quality	<i>Moderate</i>	<i>Moderate</i>	<i>High</i>	7	18 (III)
	Hydrologic	<i>Low</i>	<i>Moderate</i>	<i>Moderate</i>	5	
	Habitat	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	
Wetland 4	Water Quality	<i>Moderate</i>	<i>Moderate</i>	<i>High</i>	7	18 (III)
	Hydrologic	<i>Low</i>	<i>Moderate</i>	<i>Moderate</i>	5	
	Habitat	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	
Wetland 5	Water Quality	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	17 (III)
	Hydrologic	<i>Low</i>	<i>Moderate</i>	<i>Moderate</i>	5	
	Habitat	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	
Wetland 6	Water Quality	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	17 (III)
	Hydrologic	<i>Moderate</i>	<i>Low</i>	<i>Moderate</i>	5	
	Habitat	<i>Low</i>	<i>Moderate</i>	<i>High</i>	6	

3.3. Delineated Watercourses and Riparian Buffers

Otak biologists identified and delineated three watercourses (Lucas Creek, Tributary 1, and Tributary 2) in the study area as shown in Figure 8 in Appendix B. Lucas Creek does not have a stream buffer for the bridge scour protection project per the Lewis County Shoreline Master Program (SMP). Per the SMP, shoreline buffers for bridge projects are 0 feet regardless of the land use intensity or shoreline designation. Stream buffers for Tributary 1 and Tributary 2 have been reduced to intervening road edges where applicable in accordance with the contiguous vegetation requirement per LCC 17.10.020. Streams, water type, and buffer widths are summarized in Table 3-9. Stream characteristics are summarized in Tables 3-10 to 3-12. Additional site photographs are provided in Appendix E.

Table 3-9–Delineated Watercourses

Stream Name	Lewis County Water Type ^{1,2}	Lewis County Buffer Width (Feet)
Lucas Creek	S	0 ³
Tributary 1	F	100 ⁴
Tributary 2	Ns	75 ⁴

¹ Water Types: Type S = shorelines of the state, Type F = fish bearing or with physical criteria to support potential fish use,

Type Ns = non-fish bearing seasonal (WDNR 2025)

² LCC 17.38.470 (Lewis County 2025b)

³ Lewis County Shoreline Master Program (Lewis County 2021)

⁴ LCC 17.38.420 (Lewis County 2025b)

Table 3-10–Lucas Creek Summary

Lucas Creek Information Summary			
Location:		Looking south/downstream, upstream of bridge	
	Stream Name	Lucas Creek	
	Local Jurisdiction	Lewis County	
	Stream Type	Type S	
	Buffer Width	0 Feet	
	Cowardin Class	R5UBH	
Documented Fish Use	The Statewide Integrated Fish Distribution (SWIFD) (WDFW 2025b) inventory lists the documented presence of coastal cutthroat trout (<i>Oncorhynchus clarkii</i>); the documented spawning of steelhead (<i>Oncorhynchus mykiss</i>), coho salmon (<i>Oncorhynchus kisutch</i>), and Chinook salmon (<i>Oncorhynchus tshawytscha</i>); and the presumed presence of rainbow trout (<i>Oncorhynchus mykiss</i>).		
	According to NOAA Fisheries, Lucas Creek is not Critical Habitat nor are any of the aforementioned fishes protected under the Endangered Species Act.		
Stream Buffer Condition	Lucas Creek does not have a stream buffer for the bridge scour protection project per the Lewis County Shoreline Master Program (SMP). Per the SMP, shoreline buffers for bridge projects are 0 feet regardless of the land use intensity or shoreline designation. East of Senn Road, the Lucas Creek riparian area is forested with mixed coniferous and deciduous trees. West of Senn Road, the Lucas Creek riparian area is dominated by pastures with a mix of grasses, rushes, and sedges. A few trees are also located along Lucas Creek		
Flow Regime and Flow Path	Lucas Creek originates on forested slopes of the Cascade foothills approximately 5.5 miles east of the study area. Lucas Creek continues west of the study area approximately 3,000 feet before discharging into the North Fork Newaukum River. The North Fork Newaukum River flows generally southwest for approximately 4.2 river miles and discharges to the Newaukum River. From the confluence of the North Fork and South Fork Newaukum Rivers, the Newaukum River flows generally Northwest for approximately 6.75 miles and discharges to the Chehalis River. The Chehalis River flows northwest for approximately 60 miles and outlets to Grays Harbor.		

Table 3-11–Tributary 1 Summary

Tributary 1 Information Summary		
Location:	East of Senn Road, Parallel to Senn Road, Looking south	
	Stream Name	Tributary 1
	Local Jurisdiction	Lewis County
	Stream Type	Type F
	Buffer Width	100 feet
	Cowardin Class	R5UBH
Documented Fish Use	The SWIFD (WDFW 2025b) inventory lists the documented presence of steelhead and coho salmon and the presumed presence of rainbow trout (<i>Oncorhynchus mykiss</i>). According to NOAA Fisheries, Tributary 1 is not Critical Habitat nor are any of the aforementioned fishes protected under the Endangered Species Act.	
Stream Buffer Condition	The standard buffer width for Type F streams per the LCC is 150 feet; however, Tributary 1 is less than 10 feet wide. LCC 17.38.420 allows for the reduction of buffers on Type F streams that are less than 10 feet wide from 150 feet to 100 feet. The buffer of Tributary 1 is truncated to the west by Senn Road. To the east, the buffer is dominated by pastures with a mix of grasses, rushes, and sedges. Woody shrubs are present along the banks of Tributary 1.	
Flow Regime and Flow Path	Tributary 1 begins in the hills approximately 3,000 feet southeast of the study area. In the study area, Tributary 1 flows north along Senn Road and discharges to Lucas Creek just east of Lewis County Bridge No. 77. Lucas Creek continues west of the study area approximately 3,000 feet before discharging into the North Fork Newaukum River. The North Fork Newaukum River flows generally southwest for approximately 4.2 river miles and discharges to the Newaukum River. From the confluence of the North Fork and South Fork Newaukum Rivers, the Newaukum River flows generally Northwest for approximately 6.75 miles and discharges to the Chehalis River. The Chehalis River flows northwest for approximately 60 miles and outlets to Grays Harbor.	

Table 3-12–Tributary 2 Summary

Tributary 2 Information Summary			
Location:		East of Lucas Creek and Wetland 3, Looking east from Wetland 3	
	Stream Name		Tributary 2
	Local Jurisdiction		Lewis County
	Stream Type		Type Ns
	Buffer Width		75 feet
	Cowardin Class		R4
Documented Fish Use		There is no documented fish use in Tributary 2. Tributary 2 does not meet the definition of fish habitat as outlined in the Washington Administrative Code (WAC) 222-16-030 – Water Typing.	
Stream Buffer Condition		The buffer on both sides of Tributary 2 consists of mixed upland forest with invasive Himalayan blackberry in the understory.	
Flow Regime and Flow Path		Tributary 2 is a short, intermittent stream that flows for approximately 55 feet in the study area. Tributary 2 discharges to Lucas Creek through Wetland 3. Lucas Creek continues west of the study area approximately 3,000 feet before discharging into the North Fork Newaukum River. The North Fork Newaukum River flows generally southwest for approximately 4.2 river miles and discharges to the Newaukum River. From the confluence of the North Fork and South Fork Newaukum Rivers, the Newaukum River flows generally Northwest for approximately 6.75 miles and discharges to the Chehalis River. The Chehalis River flows northwest for approximately 60 miles and outlets to Grays Harbor.	

Section 4. Regulatory Summary

4.1. U.S. Army Corps of Engineers

The Environmental Protection Agency (EPA) and USACE regulate waters of the United States (WOTUS) under Section 404 of the Clean Water Act (CWA). The agencies are currently interpreting “waters of the United States” per the “Revised definition of Waters of the United States” rule as published on January 18, 2023. This rule became effective on September 8, 2023. Tributaries of waters of the United States and wetlands adjacent to waters of the United States are included in the definition.

Lucas Creek and Tributary 1 are classified as a tributaries to traditionally navigable waters. Wetlands 3 and 5 are located within the ordinary high water of Lucas Creek and Wetland 4 has a continuous surface connection to Lucas Creek. Wetlands 3, 4, and 5 meet the adjacency criteria for determining CWA jurisdiction. Discharge of fill material into these waterbodies is regulated under Section 404 and 401 of the CWA.

4.2. Washington State Department of Fish and Wildlife

WDFW requires issuance of a Hydraulic Permit Approval (HPA) prior to any activities that may directly or indirectly affect streams or associated aquatic resources considered as waters of the state per the Revised Code of Washington (RCW) 90.48.020. Construction in or near state waters that will “use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters in the state” (RCW 77.55.011(11)) require an HPA. Lucas Creek, Tributary 1, and Tributary 2 are considered waters of the state, and any work within or over the OHWM of these watercourses will require an HPA per the Hydraulic Code Rules (WAC 220-660).

4.3. Washington State Department of Ecology

Ecology regulates activities in wetlands and streams under Section 401 of the CWA through the Water Quality Certification process. Ecology has authority over discharge into all wetlands and streams and can impose buffers and compensatory mitigation for impacts per RCW 90.48 (Water Pollution Act) depending on the proposed project and impacts to aquatic resources.

4.4. Local Jurisdiction – Lewis County

Wetlands, streams, associated buffers, floodplains, and FWHCAs are regulated by Lewis County under LCC 17.38 (Critical Areas) and the Lewis County Shoreline Master Program. Lucas Creek is classified as a Type S (Shoreline of the State) watercourse.

Lucas Creek is a shoreline of the state (Type S) and regulated under the Lewis County Shoreline Master Program along with all shorelands within 200 feet of the ordinary high water of Lucas Creek. Shoreline jurisdiction extends for 200 feet from the OHWM at a minimum or the extent of the floodway, whichever is larger. A floodway is not mapped on this stretch of Lucas Creek, but the entire study area is within shoreline jurisdiction as it is within 200 feet of the OHWM on each bank. The study area is located in the rural conservancy shoreline environment designation. Under the Lewis County SMP, Lucas Creek has a Standard Shoreline Buffer from the OHWM of 0 feet per Table 4-1 in Section 4.04.02 for projects that include transportation facilities, including bridges for motorized or non-motorized uses.

Section 5. References

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Appendix A: Methods and Tools

Table A-1—Methods and Tools Used to Prepare the Report

Parameter	Method or Tool	Website	Reference
Wetland Delineation	Corps of Engineers Wetlands Delineation Manual	https://www.sac.usace.army.mil/portals/43/docs/regulatory/1987_wetland_delineation_manual_reg.pdf	U.S. Army Corps of Engineers. 1987. <i>Corps of Engineers Wetland Delineation Manual</i> . Environmental Laboratory Wetlands Research Program Technical Report Y-87-1, U.S. Army Corps of Engineers, Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: WMVC	https://usace.contentdm.oclc.org/utis/getfile/collection/p266001coll1/id/7646	U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J.S. Wakely, R. W. Lichvar, and C.V. noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	https://www.epa.gov/sites/default/files/2017-05/documents/cowardin_1979.pdf	Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Government Printing Office, Washington, D.C.
	Hydrogeomorphic Classification (HGM) System	https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/3348/	Brinson, M. M. 1993. "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. NTIS No. AD A270 053.
Wetland Rating	Washington State Wetland Rating System: Western WA	https://apps.ecology.wa.gov/publications/SummaryPages/2306009.html	Hruby & Yhanke. 2023. Washington State Wetland Rating System for Western Washington –2014 Update Version 2.0. Publication # 23-06-009.
	Lewis County Code	https://www.codepublishing.com/WA/LewisCounty/#/LewisCounty17/LewisCounty1738.html#17.38	Website. Requires compliance with Lewis County Code (17.38) and use of 2014 Ecology rating system or revised and approved by Ecology.
Stream Delineation	OHW	https://erdc-library.erdc.dren.mil/items/76c61f8f-6d75-4a35-aaf3-39aa64918afb	U.S. Army Corps of Engineers. National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (National OHWM Manual). ERDC/CRREL TR-25-1, US Army Engineer Research and Development Center Cold Regions Research and Engineering Laboratory. Hanover, NH.
	OHW	https://www.ecfr.gov/current/title-33/chapter-II/part-328?toc=1	Congressional Federal Register 33 Part 328 Definition of Waters of the United States.
	OHW	https://fortress.wa.gov/ecy/publications/documents/1606029.pdf	Washington State Department of Ecology. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State – Revised October 2016. Ecology publication #16-06-

Parameter	Method or Tool	Website	Reference
Stream Classification	Department of Natural Resources (DNR) Water Typing System	Forest Practices Water Typing: https://dnr.wa.gov/forest-regulation/forest-practices-application/forest-practices-water-typing WAC 222-16-030: https://app.leg.wa.gov/WAC/default.aspx?cite=222-16-030 Water Type Mapping: https://fpamt.dnr.wa.gov/default.aspx	Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.
	Lewis County Code	https://www.codepublishing.com/WA/LewisCounty/#!/LewisCounty17/LewisCounty1738.html#17.38.470	Lewis County Code 17.38.470 – Classification of Fish and Wildlife Habitat.
Wetland Indicator Status	WMVC 2020 Regional Wetland Plant List	https://wetland-plants.sec.usace.army.mil/static/reports/NWPL%20Cover%20Page%20National_v3.pdf	USACE. 2022. Western Mountains, Valleys & Coasts: 2020 Regional Plant List. Version 3.6.
Plant Names	USDA PLANTS Database	https://plants.usda.gov/	Website
Soils Data	Soil Survey	Web Soil Survey: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	Website
Threatened and Endangered Species	WDNR - WA Wetlands of High Conservation Value Mapper	http://wadnr.maps.arcgis.com/apps/webappviewer/index.html?id=5cf9e5b22f584ad7a4e2aebc63c47bda	Website
	Washington Priority Habitats and Species	https://geodataservices.wdfr.wa.gov/hp/phs/	Priority Habitats and Species (PHS) Program – August 2008 Washington State Priority Habitats and Species List (revised June 2023)
	NOAA National NMFS ESA Critical Habitat Mapper	https://www.fisheries.noaa.gov/resource/map/national-esa-critical-habitat-mapper	Website
	USFWS IPaC species lists	https://ecos.fws.gov/ipac/	Website

Appendix B: Background Information and Figures

Figure 1: Vicinity Map

Figure 2: Study Area

Figure 3: USGS Topo Map

Figure 4: National Wetland Inventory

Figure 5: NRCS Soil Survey

Figure 6: Lewis County Wetland Inventory

Figure 7: Lewis County Shoreline Designation

Figure 8: Delineated Wetlands, Streams, and Buffers

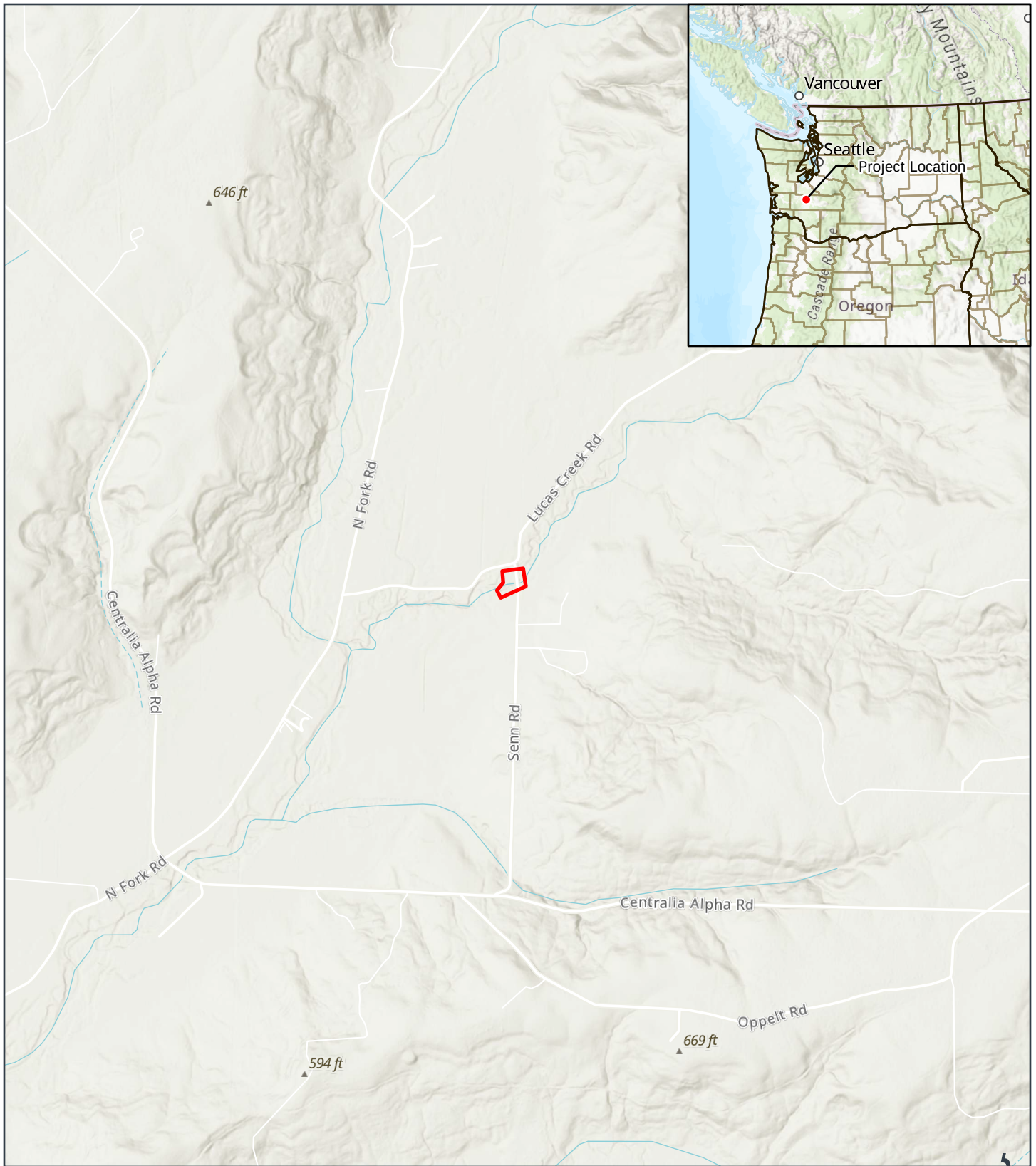


FIGURE 1
VICINITY MAP

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

Study Area

0 2,000 ft



FIGURE 2
SITE OVERVIEW

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- ▭ Study Area
- WA DNR Stream Inventory

0 100 ft

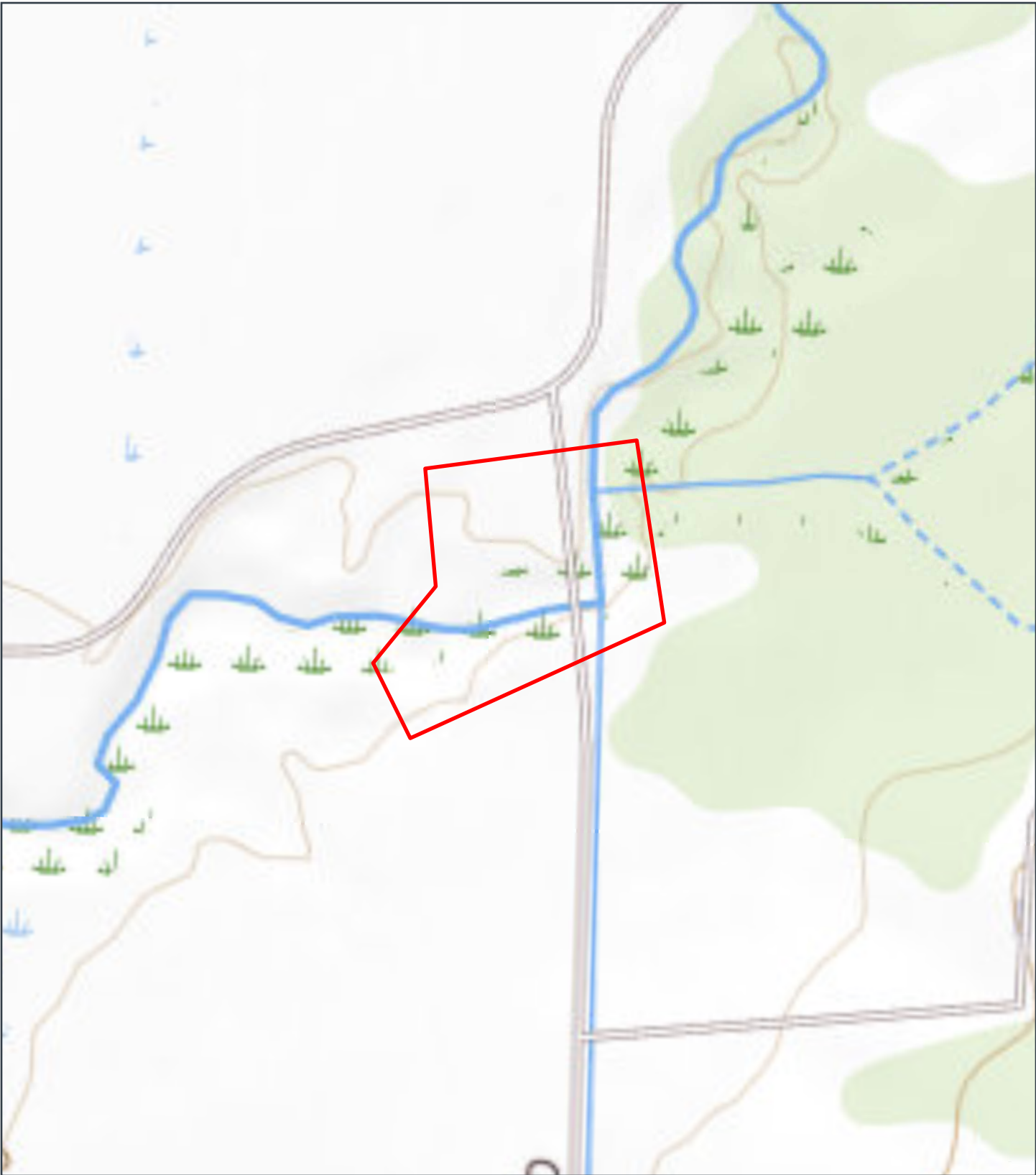


FIGURE 3
USGS TOPO
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND
 StudyArea

0 200 ft



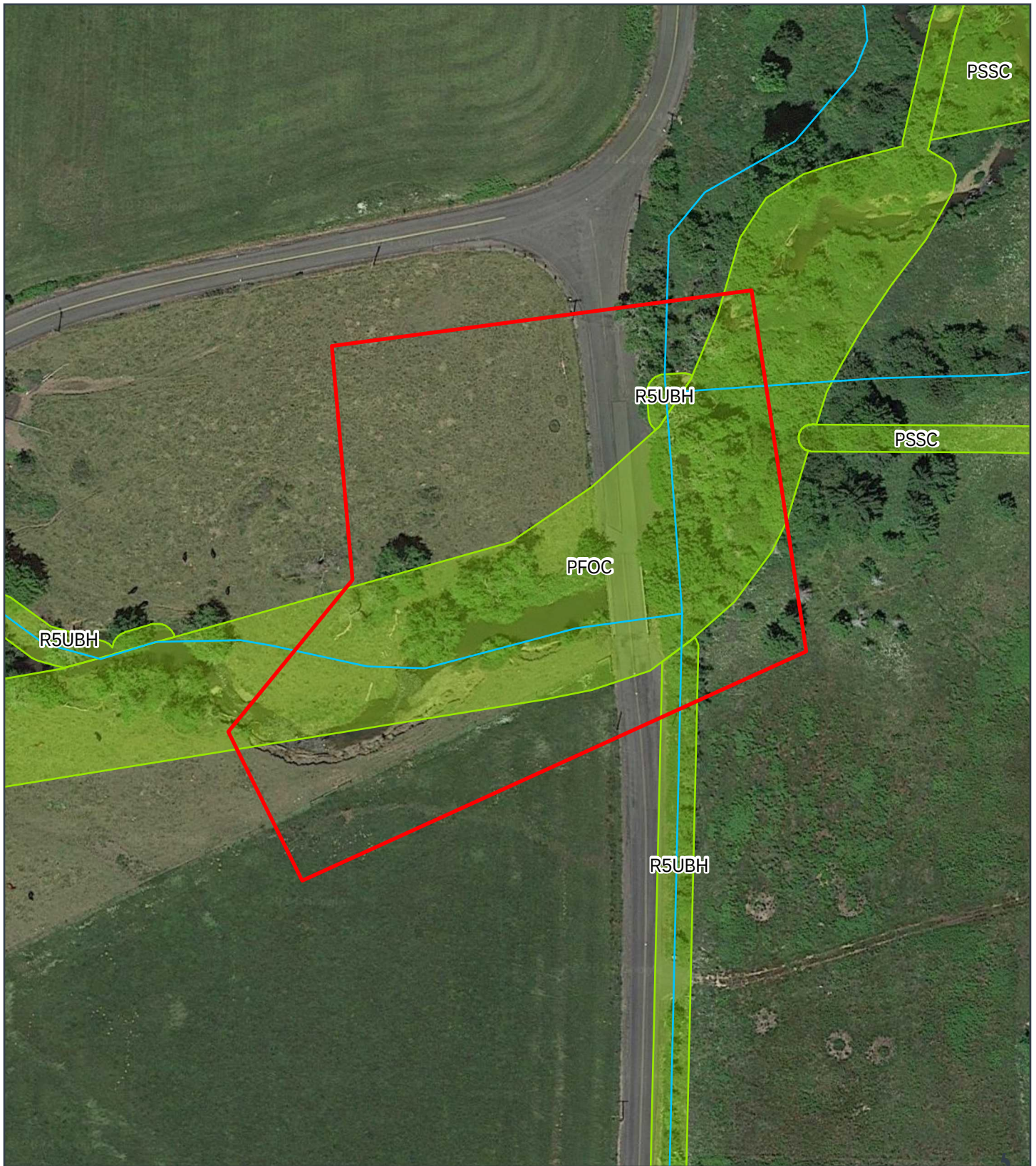


FIGURE 4
NATIONAL WETLANDS INVENTORY
 SENN ROAD BRIDGE SCOUR REPAIR | 21588A
 LEWIS COUNTY, WASHINGTON

LEGEND

- National Wetlands Inventory
- WA DNR Stream Inventory
- Study Area

Data Sources:
 Date: 9/22/2024
 Disclaimer: This data is not to survey accuracy and is meant for planning purposes only.
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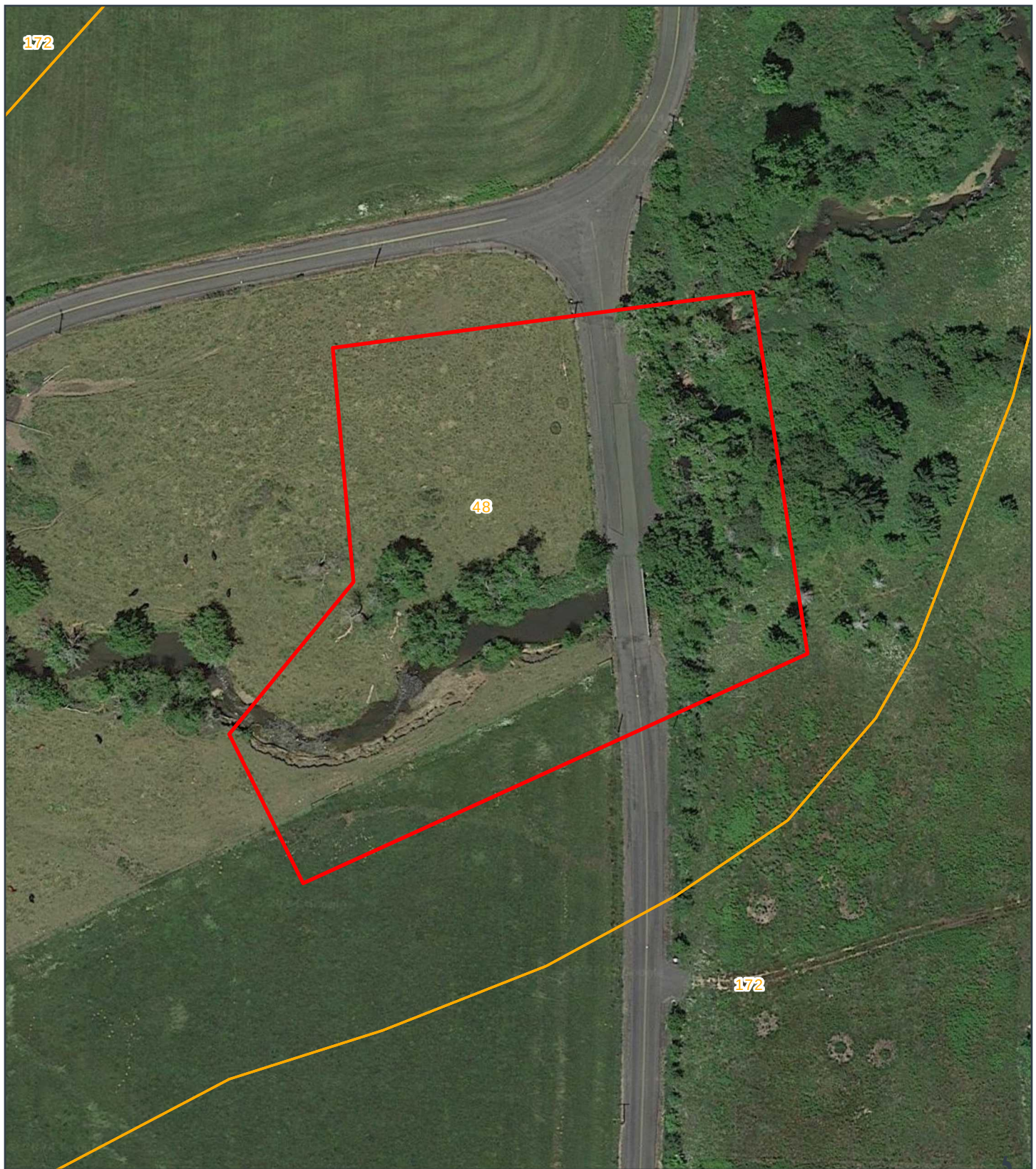


FIGURE 5 NRCS SOIL SURVEY

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- ▬ USGS Soil Survey Map Units
- ▬ Study Area

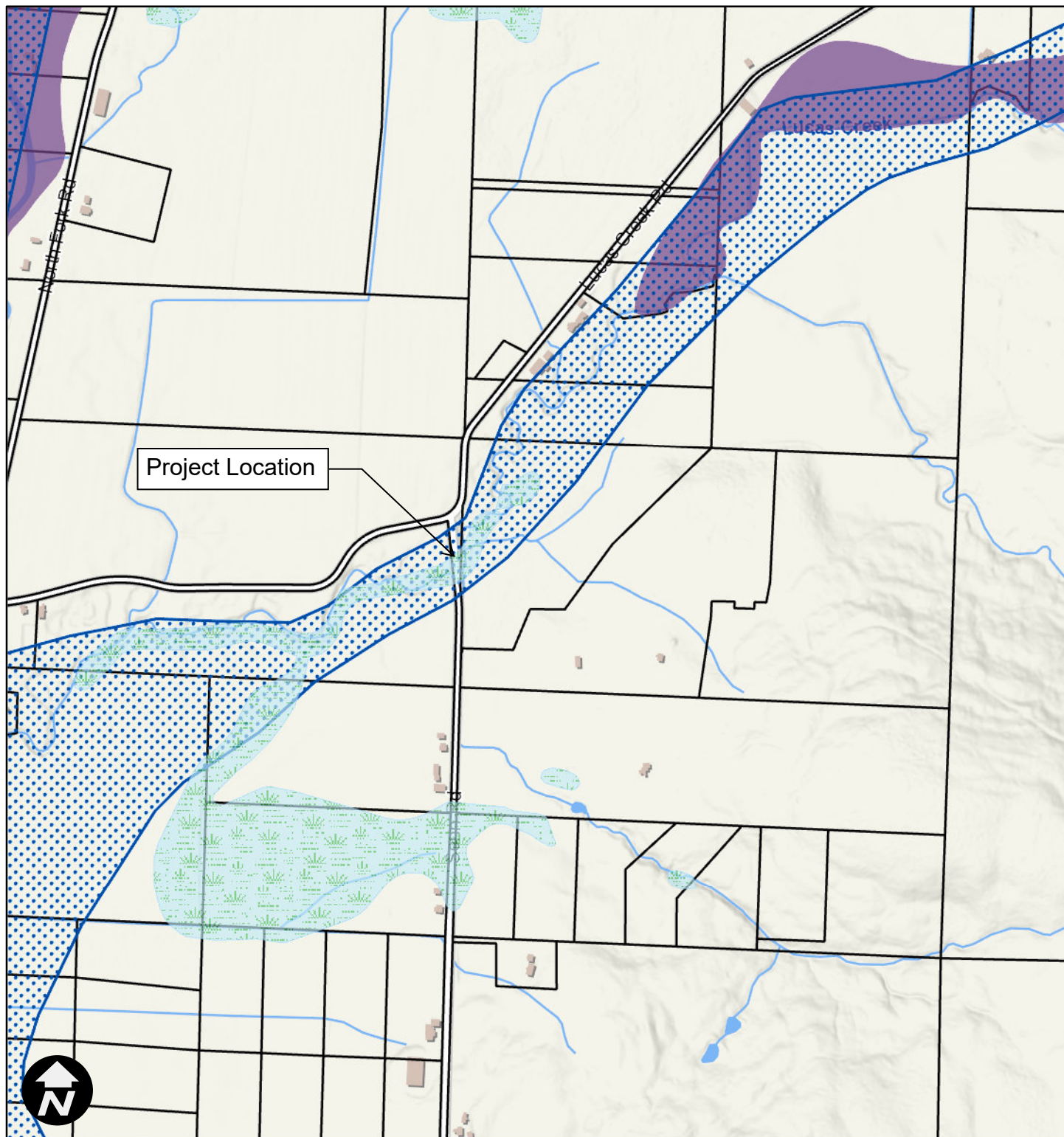
0 100 ft

172 - Reed silty clay loam
172 - Reed silty clay loam
48 - Chehalis silty clay

Data Sources:
Date: 9/22/2024
Disclaimer: This data is not to survey accuracy and is meant for planning purposes only.
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Figure 6 - Lewis County Critical Areas Inventory



8/23/2024, 11:58:50 AM

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- | | |
|---|--|
|  Wetlands |  Category III |
|  FEMA 100-Year |  Parcels |
|  CARA Category I | |

CARA Soils

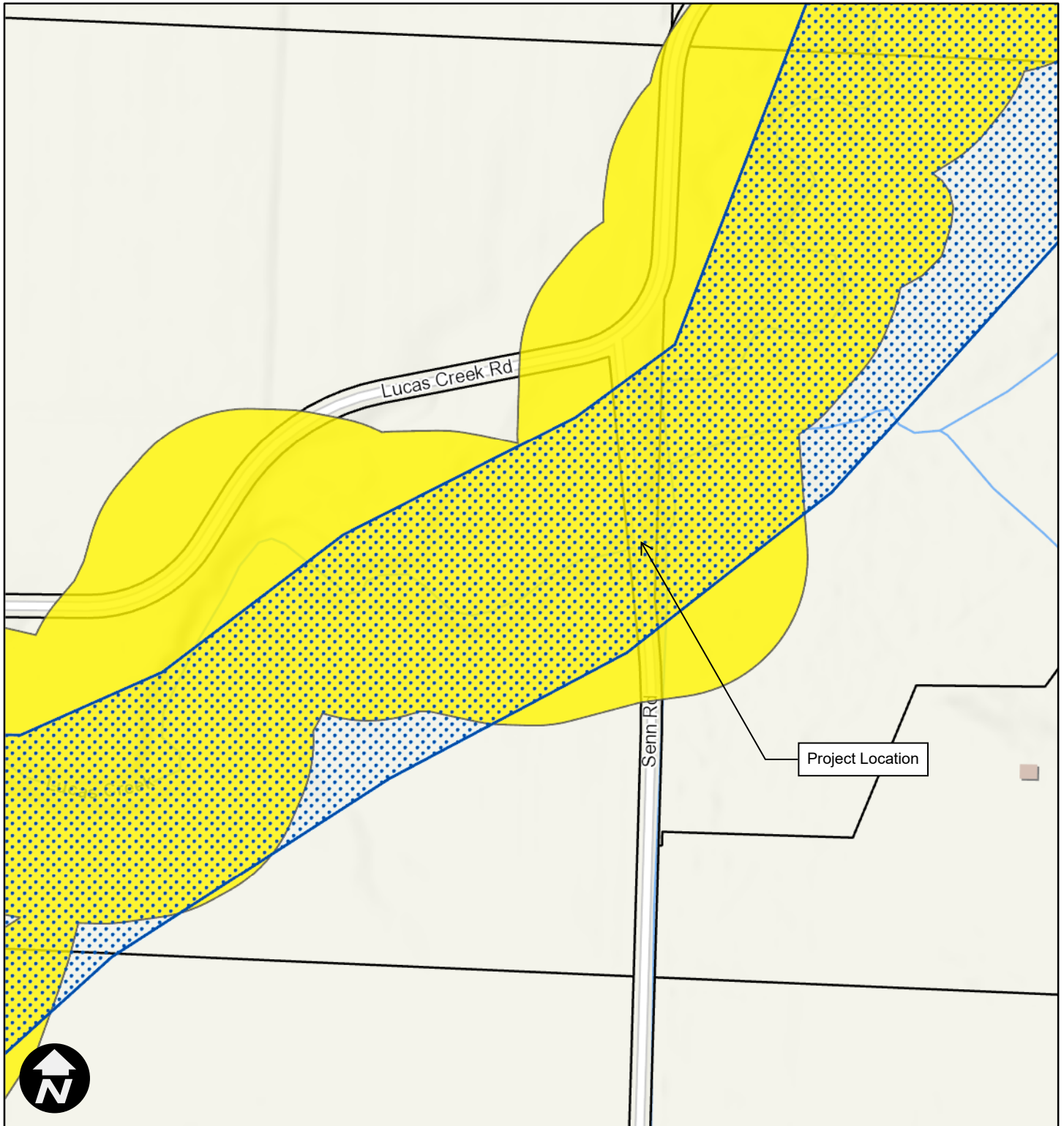
- | |
|---|
|  Category II |
|---|

0 400 800 1,600 ft
NAD 1983 StatePlane Washington South FIPS 4602 Feet



Lewis County does not guarantee the accuracy of the information shown on this map and is not responsible for any use or misuse by others regarding this material. It is provided for general informational purposes only. This map does not meet legal, engineering, or survey standards. Please practice due diligence and consult with licensed experts before making decisions.

Figure 8: Lewis County Shoreline Designation



2/5/2025, 3:56:54 PM

1:2,400

- | | | | |
|-------------------------------|---------------|--|----------------------------|
| | FEMA 100-Year | | Rural or Urban Conservancy |
| | Floodway | | Shoreline Residential |
| Shoreline Environments | | | High Intensity |
| | Aquatic | | Parcels |
| | Natural | | |

0 105 210 420 ft
NAD 1983 StatePlane Washington South FIPS 4602 Feet



Lewis County does not guarantee the accuracy of the information shown on this map and is not responsible for any use or misuse by others regarding this material. It is provided for general informational purposes only. This map does not meet legal, engineering, or survey standards. Please practice due diligence and consult with licensed experts before making decisions.

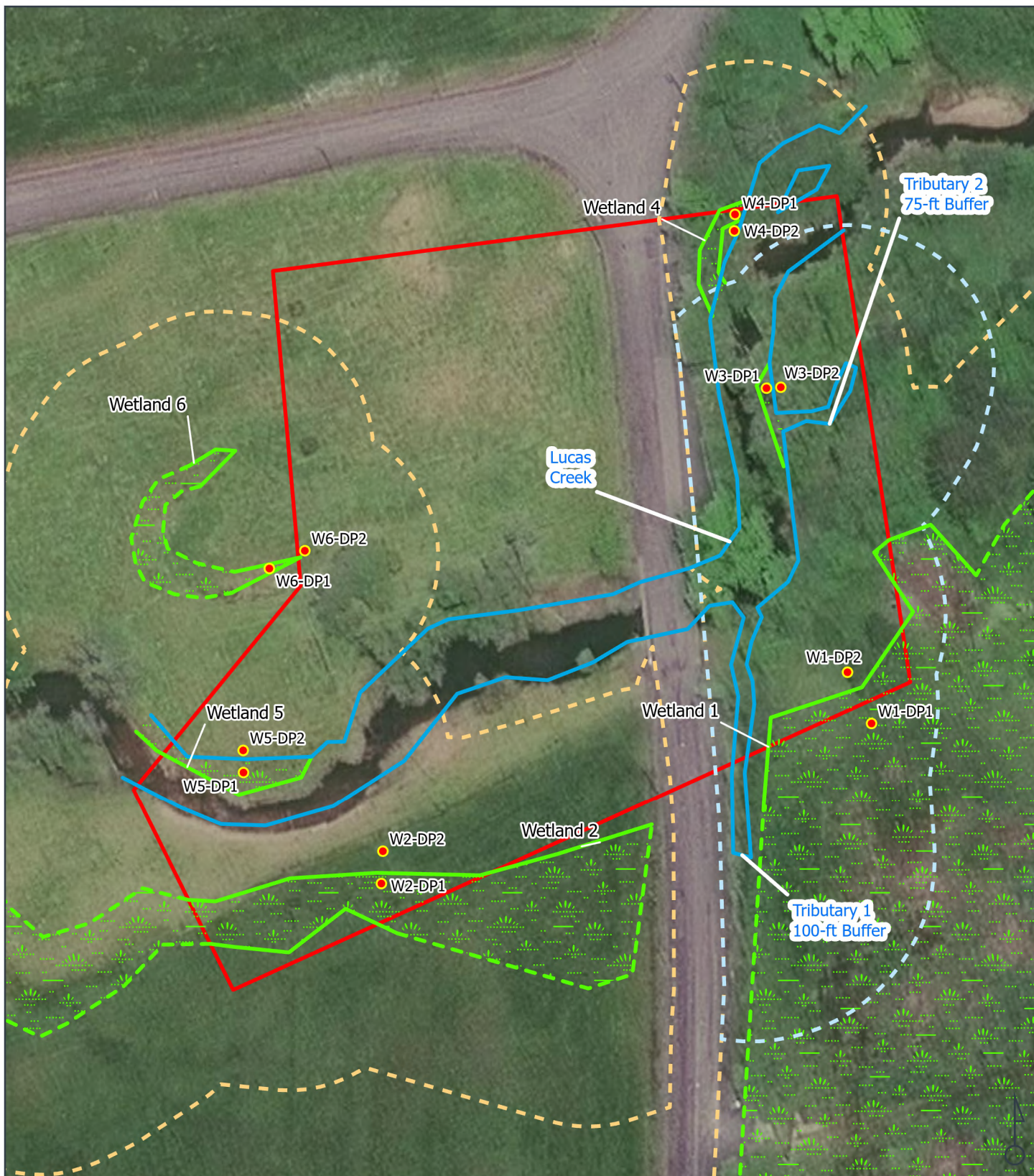


FIGURE 8
DELINEATED WETLANDS, STREAMS,
& BUFFERS

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

Data Sources:
Date: 9/10/2025
Disclaimer: This data is not to survey accuracy and is meant for planning purposes only.
O:\PROJECT\21500\21588A\04 CAD\GIS\MXDs\21588A_SennRd.aprx

LEGEND

- Delineated Wetland Boundary
- - - Estimated Wetland Boundary
- ⋯ WetlandArea
- Data Point
- Ordinary High Water
- - - Wetland Buffer (75 ft)
- - - Stream Buffer
- Study Area

0 75 ft



Appendix C: Wetland Determination Data Forms

W1-DP1

W1-DP2

W2-DP1

W2-DP2

W3-DP1

W3-DP2

W4-DP1

W4-DP2

W5-DP1

W5-DP2

W6-DP1

W6-DP2

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

Project Site: Senn Road City/County: ____/Lewis County Sampling Date: 12/3/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W1-DP1
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): 0-1
 Subregion (LRR): A Lat: 46.638893 Long: -122.771274 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 15 feet SSE of flag W1-A3. Indicators of hydrophytic vegetation, hydric soils, and wetland hydrology observed at W1-DP1. W1-DP1 is located in wetland			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-ft diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>--</u>	_____			Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____			
3. _____	_____			
4. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum (Plot size: 15-ft diam.)</u>				
1. <u>--</u>	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			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.
5. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
<u>Herb Stratum (Plot size: 5-ft diam.)</u>				
1. <u>Carex obnupta</u>	<u>60</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Juncus effusus</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Holcus lanatus</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
4. <u>Poa sp.</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
5. _____	_____			
6. _____	_____			
7. _____	_____			
8. _____	_____			
9. _____	_____			
10. _____	_____			
11. _____	_____			
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
<u>Woody Vine Stratum (Plot size: 15-ft diam.)</u>				
1. <u>--</u>	_____			Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Vegetation at W1-DP1 passes the Rapid Test for Hydrophytic Vegetation hydrophytic vegetation indicator.				

Project Site: Senn Rd

SOIL

Sampling Point: W1-DP1

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			
0-20	10YR 4/2	85	7.5YR 4/6	15	C	PL, M	Loam	Prominent redox concentrations

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 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)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

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

Remarks: Hydric soil indicator Depleted matrix (F3) observed at W1-DP1.

HYDROLOGY

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

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

Remarks: Primary wetland hydrology indicator Oxidized Rhizospheres along Living Roots (C3) observed at W1-DP1.
 Secondary wetland hydrology indicators Water-Stained Leaves (B9), Drainage Patterns (B10), and FAC-Neutral Test (D5) observed at W1-DP1.
 Surface water ponded in depressions near W1-DP1.

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/3/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W1-DP2
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope (%): 0-1
 Subregion (LRR): A Lat: 46.638968 Long: -122.771329 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 15 feet SSE of flag W1-A3. Indicators of hydrophytic vegetation, hydric soils, or wetland hydrology were not observed at W1-DP2. W1-DP2 is not located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-ft diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>Pseudotsuga menziesii</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____			Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft diam.)				Prevalence Index worksheet:
1. <u>--</u>	_____			
2. _____	_____			OBL species _____ x1 = _____
3. _____	_____			FACW species _____ x2 = _____
4. _____	_____			FAC species _____ x3 = _____
5. _____	_____			FACU species _____ x4 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: 5-ft diam.)				Column Totals: _____ (A) _____ (B)
1. <u>Poa pratensis</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>Poa bulbosa</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Hypochaeris radicata</u>	<u>15</u>	<u>no</u>	<u>FACU</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.
4. <u>Agrostis sp.</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
5. <u>Cardamine sp.</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
6. <u>Unknown grass</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
7. _____	_____			
8. _____	_____			
9. _____	_____			
10. _____	_____			
11. _____	_____			
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover		
Woody Vine Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	_____			Hydrophytic Vegetation Present? Yes ☐ No ☒
2. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>10</u>				
Remarks: No hydrophytic vegetation indicators observed at W1-DP2.				

Project Site: Senn Rd

SOIL

Sampling Point: W1-DP2

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		
0-20	7.5YR 3/3	100					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)	☐ 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 Soils Present? Yes ☐ No ☒
--	--

Remarks: No hydric soil indicators observed at W1-DP2.

HYDROLOGY

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

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

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

Remarks: No wetland hydrology indicators observed at W1-DP2.

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

Project Site: Senn Road City/County: ____/Lewis County Sampling Date: 12/3/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W2-DP1
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 1-2
 Subregion (LRR): A Lat: 46.638632 Long: -122.772325 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 8 feet S of flag W2-A3. W2 is located in a mowed ag field. Indicators of hydrophytic vegetation, hydric soil, and wetland hydrology observed at W2-DP1. W2-DP1 is located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-ft diam.)	Absolute % Cover	Dominant Species?	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</u> (A/B)
1. <u>--</u>	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: 5-ft diam.)				
1. <u>Poa pratensis</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Juncus effusus</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Unknown grass</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
4. <u>Holcus lanatus</u>	<u>15</u>	<u>no</u>	<u>FAC</u>	
5. _____	_____			
6. _____	_____			
7. _____	_____			
8. _____	_____			
9. _____	_____			
10. _____	_____			
11. _____	_____			
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	_____			
2. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____				
Hydrophytic Vegetation Indicators: ☐ 1 – Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☐ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ 5 - Wetland Non-Vascular Plants ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes ☒ No ☐				

Remarks: Vegetation at W2-DP1 passes the Dominance Test hydrophytic vegetation indicator.

Project Site: Senn Rd

SOIL

Sampling Point: W2-DP1

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			
0-2	10YR 3/2	100				Loam		
2-20	10YR 4/2	85	7.5YR 4/6	15	C	Loam	Prominent redox concentrations	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	

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 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 Soils Present? Yes ☒ No ☐
--	--

Remarks: Hydric soil indicator Depleted matrix (F3) observed at W2-DP1.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☒ High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) ☒ Saturation (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13) ☐ Sediment Deposits (B2) ☐ Hydrogen Sulfide Odor (C1) ☐ Drift Deposits (B3) ☒ Oxidized Rhizospheres along Living Roots (C3) ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☒ 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): <u>6</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>4</u>	Wetland Hydrology Present? Yes ☒ No ☐
--	---

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

Remarks: Primary wetland hydrology indicators High Water Table (A2), Saturation (A3), and Oxidized Rhizospheres along Living Roots observed at W2-DP1.
 Secondary wetland hydrology indicators Geomorphic Position (D2) and FAC-Neutral Test (D5) observed at W2-DP1.
 Areas of surface ponding observed adjacent to W2-DP1.

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/3/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W2-DP2
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): A Lat: 46.638681 Long: -122.772323 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 8 feet N of flag W2-A3. W2 is located in a mowed ag field. Indicators of hydrophytic vegetation observed at W2-DP2. Indicators of hydric soil and wetland hydrology not observed at W2-DP2. W2-DP2 is not located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-ft diam.)	Absolute % Cover	Dominant Species?	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</u> (A/B)
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	<u> </u>			Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
5. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: 5-ft diam.)				
1. <u>Unknown grass</u>	<u>40</u>	<u>yes</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. <u>Poa pratensis</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Agrostis sp.</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
4. <u> </u>	<u> </u>			
5. <u> </u>	<u> </u>			
6. <u> </u>	<u> </u>			
7. <u> </u>	<u> </u>			
8. <u> </u>	<u> </u>			
9. <u> </u>	<u> </u>			
10. <u> </u>	<u> </u>			
11. <u> </u>	<u> </u>			
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	<u> </u>			Hydrophytic Vegetation Present? Yes ☒ No ☐
2. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Vegetation at W2-DP2 passes the Dominance Test hydrophytic vegetation indicator.				

Project Site: Senn Rd

SOIL

Sampling Point: W2-DP2

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		
0-20	7.5YR 4/3	100					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)	☐ 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 Soils Present? Yes ☐ No ☒
--	--

Remarks: No hydric soil indicators observed at W2-DP2.

HYDROLOGY

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

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

Remarks: No wetland hydrology indicators observed at W2-DP2.

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/4/2024
Applicant/Owner: Lewis County State: WA Sampling Point: W3-DP1
Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR): A Lat: 46.639387 Long: -122.771522 Datum: WGS84
Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 6 feet east of flag W3-A2. Indicators of hydrophytic vegetation, hydric soil, and wetland hydrology observed at W3-DP1. W3-DP1 is located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>30-ft diam.</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. <u>--</u>	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-ft diam.</u>)				
1. <u>Salix sitchensis</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover		
Herb Stratum (Plot size: <u>5-ft diam.</u>)				
1. <u>Phalaris arundinacea</u>	<u>90</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
6. _____	_____			
7. _____	_____			
8. _____	_____			
9. _____	_____			
10. _____	_____			
11. _____	_____			
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>15-ft diam.</u>)				
1. <u>--</u>	_____			
2. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>10</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.				
Hydrophytic Vegetation Present? Yes ☒ No ☐				
Remarks: Vegetation at W3-DP1 passes the Rapid Test for Hydrophytic Vegetation hydrophytic vegetation indicator.				

Project Site: Senn Rd

SOIL

Sampling Point: W3-DP1

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		
0-20	10YR 4/2	85	10YR 4/6	15	C	M	Loam	Prominent redox concentrations

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 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)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

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

Remarks: Hydric soil indicator Depleted Matrix (F3) observed at W3-DP1.
 Soil profile mixed with approximately 40% gravel.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☒ High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) ☒ Saturation (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13) ☐ Sediment Deposits (B2) ☐ Hydrogen Sulfide Odor (C1) ☐ Drift Deposits (B3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☒ 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): <u>2</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Primary wetland hydrology indicators High Water Table (A2) and Saturation (A3) observed at W3-DP1.
 Secondary wetland hydrology indicators Geomorphic Position (D2) and FAC-Neutral Test (D5) observed at W3-DP1.

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

Project Site: Senn Road City/County: ____/Lewis County Sampling Date: 12/4/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W3-DP2
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 46.639389 Long: -122.771491 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 13 feet east of flag W3-A2 and approximately 4 feet east of the ordinary high water of Lucas Creek. Indicators of hydrophytic vegetation observed at W3-DP2. Indicators of hydric soil and wetland hydrology not observed at W3-DP2.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>30-ft diam.</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u><i>Alnus rubra</i></u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
2. <u><i>Fraxinus latifolia</i></u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = <u>32.5</u> , 20% = <u>13</u>	<u>65</u>	= Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> _____ <u>Multiply by:</u> _____ OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15-ft diam.</u>)				
1. <u><i>Rubus armeniacus</i></u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	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.
5. _____	_____	_____	_____	
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover		
Herb Stratum (Plot size: <u>5-ft diam.</u>)				
1. <u><i>Phalaris arundinacea</i></u>	<u>90</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>15-ft diam.</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>10</u>				

Remarks: Vegetation at W3-DP2 passes the Dominance Test hydrophytic vegetation indicator.

Project Site: Senn Rd

SOIL

Sampling Point: W3-DP2

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		
0-20	7.5YR 3/3	100						

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 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 Soils Present? Yes ☐ No ☒
--	--

Remarks: No hydric soil indicators observed at W3-DP2.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☐ High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) ☐ Saturation (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13) ☐ Sediment Deposits (B2) ☐ Hydrogen Sulfide Odor (C1) ☐ Drift Deposits (B3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☐ 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 ☒
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No primary wetland hydrology indicators observed at W3-DP2, and only one secondary indicator (D5).

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

Project Site: Senn Road City/County: ____/Lewis County Sampling Date: 12/4/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W4-DP1
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A Lat: 46.639645 Long: -122.771601 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 6 feet W flag W4-A10. Indicators of hydrophytic vegetation, hydric soil, and wetland hydrology observed at W4-DP1. W4-DP1 is located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-ft diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>--</u>	<u>_____</u>			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</u> (A/B)
2. <u>_____</u>	<u>_____</u>			
3. <u>_____</u>	<u>_____</u>			
4. <u>_____</u>	<u>_____</u>			
50% = <u>_____</u> , 20% = <u>_____</u>	<u>0</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	<u>_____</u>			
2. <u>_____</u>	<u>_____</u>			
3. <u>_____</u>	<u>_____</u>			
4. <u>_____</u>	<u>_____</u>			
5. <u>_____</u>	<u>_____</u>			
50% = <u>_____</u> , 20% = <u>_____</u>	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: 5-ft diam.)				
1. <u>Phalaris arundinacea</u>	<u>20</u>	<u>yes</u>	<u>FACW</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. <u>Carex obnupta</u>	<u>15</u>	<u>yes</u>	<u>OBL</u>	
3. <u>Ranunculus repens</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
4. <u>_____</u>	<u>_____</u>			
5. <u>_____</u>	<u>_____</u>			
6. <u>_____</u>	<u>_____</u>			
7. <u>_____</u>	<u>_____</u>			
8. <u>_____</u>	<u>_____</u>			
9. <u>_____</u>	<u>_____</u>			
10. <u>_____</u>	<u>_____</u>			
11. <u>_____</u>	<u>_____</u>			
50% = <u>25</u> , 20% = <u>10</u>	<u>50</u>	= Total Cover		
Woody Vine Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	<u>_____</u>			Hydrophytic Vegetation Present? Yes ☒ No ☐
2. <u>_____</u>	<u>_____</u>			
50% = <u>_____</u> , 20% = <u>_____</u>	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>50</u>				
Remarks: Vegetation at W4-DP1 passes the Dominance Test hydrophytic vegetation indicator.				

Project Site: Senn Rd

SOIL

Sampling Point: W4-DP1

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		
0-20	10YR 4/1	80	7.5YR 4/6	20	C	PL, M	Loam	Prominent redox concentrations

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 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)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

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

Remarks: Hydric soil indicator Depleted matrix (F3) observed at W4-DP1.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☒ High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) ☒ Saturation (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13) ☐ Sediment Deposits (B2) ☐ Hydrogen Sulfide Odor (C1) ☐ Drift Deposits (B3) ☒ Oxidized Rhizospheres along Living Roots (C3) ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☒ 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): <u>10</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>8</u>	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Primary wetland hydrology indicators high Water Table (A2) and Saturation (A3) observed at W4-DP1.
 Secondary wetland hydrology indicators Geomorphic Position (D2) and FAC-Neutral Test (D5) observed at W4-DP1.

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/4/2024
Applicant/Owner: Lewis County State: WA Sampling Point: W4-DP2
Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRR): A Lat: 46.63962 Long: -122.771601 Datum: WGS84
Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 6 feet toward water from flag W4-A9. Indicators of hydrophytic vegetation observed at W4-DP2. Indicators of hydric soil and wetland hydrology not observed at W4-DP2. W4-DP2 is not located in wetland.		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>30-ft diam.</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>--</u>	<u> </u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. <u> </u>	<u> </u>			Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. <u> </u>	<u> </u>			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-ft diam.</u>)				Prevalence Index worksheet:
1. <u>--</u>	<u> </u>			Total % Cover of: Multiply by:
2. <u> </u>	<u> </u>			OBL species <u> </u> x1 = <u> </u>
3. <u> </u>	<u> </u>			FACW species <u> </u> x2 = <u> </u>
4. <u> </u>	<u> </u>			FAC species <u> </u> x3 = <u> </u>
5. <u> </u>	<u> </u>			FACU species <u> </u> x4 = <u> </u>
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		UPL species <u> </u> x5 = <u> </u>
Herb Stratum (Plot size: <u>5-ft diam.</u>)				Column Totals: <u> </u> (A) <u> </u> (B)
1. <u>Poa pratensis</u>	<u>60</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = <u> </u>
2. <u>Phalaris arundinacea</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	
3. <u> </u>	<u> </u>			Hydrophytic Vegetation Indicators:
4. <u> </u>	<u> </u>			☐ 1 – Rapid Test for Hydrophytic Vegetation
5. <u> </u>	<u> </u>			☒ 2 - Dominance Test is >50%
6. <u> </u>	<u> </u>			☐ 3 - Prevalence Index is ≤3.0 ¹
7. <u> </u>	<u> </u>			☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8. <u> </u>	<u> </u>			☐ 5 - Wetland Non-Vascular Plants ¹
9. <u> </u>	<u> </u>			☐ Problematic Hydrophytic Vegetation ¹ (Explain)
10. <u> </u>	<u> </u>			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
11. <u> </u>	<u> </u>			
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>15-ft diam.</u>)				Hydrophytic Vegetation Present? Yes ☒ No ☐
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>50</u>				
Remarks: Vegetation at W4-DP2 passes the Dominance Test hydrophytic vegetation indicator.				

Project Site: Senn Rd

SOIL

Sampling Point: W4-DP2

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		
0-20	7.5YR 3/3	100					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)	☐ 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 Soils Present? Yes ☐ No ☒
Remarks: No hydric soil indicators observed at W4-DP2.		

HYDROLOGY

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

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____		Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators observed at W4-DP2.		

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/4/2024
Applicant/Owner: Lewis County State: WA Sampling Point: W5-DP1
Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): 2
Subregion (LRR): A Lat: 46.638793 Long: -122.77263 Datum: WGS84
Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located half way between flags W5-A3 and OHW1-B23. Indicators of hydrophytic vegetation, hydric soil, and wetland hydrology observed at W5-DP1. W5-DP1 is located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>30-ft diam.</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. <u>--</u>	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-ft diam.</u>)				Prevalence Index worksheet: <u>Total % Cover of:</u> _____ <u>Multiply by:</u> _____ OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>--</u>	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____			
5. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>5-ft diam.</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.
1. <u>Carex obnupta</u>	<u>25</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Juncus effusus</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Poa sp.</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____			
5. _____	_____			
6. _____	_____			
7. _____	_____			
8. _____	_____			
9. _____	_____			
10. _____	_____			
11. _____	_____			
50% = <u>27.5</u> , 20% = <u>11</u>	<u>55</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>15-ft diam.</u>)				Hydrophytic Vegetation Present? Yes ☒ No ☐
1. <u>--</u>	_____			
2. _____	_____			
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>50</u>				
Remarks: Vegetation at W5-DP1 passes the Rapid Test for Hydrophytic Vegetation hydrophytic vegetation indicator.				

Project Site: Senn Rd

SOIL

Sampling Point: W5-DP1

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			
0-20	10YR 4/2	80	10YR 4/6	20	C	PL, M	ClayLoam	Prominent redox concentrations

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 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)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

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

Remarks: Hydric soil indicator Depleted matrix (F3) observed at W4-DP1.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☒ High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) ☒ Saturation (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13) ☐ Sediment Deposits (B2) ☐ Hydrogen Sulfide Odor (C1) ☐ Drift Deposits (B3) ☒ Oxidized Rhizospheres along Living Roots (C3) ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☒ 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): <u>5</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Primary wetland hydrology indicators high Water Table (A2), Saturation (A3), and Oxidized Rhizospheres along Living Roots (C3) observed at W5-DP1.
 Secondary wetland hydrology indicators Geomorphic Position (D2) and FAC-Neutral Test (D5) observed at W5-DP1.

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/4/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W5-DP2
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): A Lat: 46.638826 Long: -122.772632 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: Data point is located approximately 12 feet west of flag OHW1-B23. Indicators of hydrophytic vegetation observed at W5-DP2. Indicators of hydric soil and wetland hydrology not observed at W5-DP2. W5-DP2 not located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>30-ft diam.</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-ft diam.</u>)				
1. <u>--</u>	<u> </u>			Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
5. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>5-ft diam.</u>)				
1. <u>Poa pratensis</u>	<u>90</u>	<u>yes</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. <u>Juncus effusus</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
5. <u> </u>	<u> </u>			
6. <u> </u>	<u> </u>			
7. <u> </u>	<u> </u>			
8. <u> </u>	<u> </u>			
9. <u> </u>	<u> </u>			
10. <u> </u>	<u> </u>			
11. <u> </u>	<u> </u>			
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>15-ft diam.</u>)				
1. <u>--</u>	<u> </u>			Hydrophytic Vegetation Present? Yes ☒ No ☐
2. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>50</u>				

Remarks:	Vegetation at W5-DP2 passes the Dominance Test hydrophytic vegetation indicator.
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Project Site: Senn Rd

SOIL

Sampling Point: W5-DP2

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		
0-20	7.5YR 3/3	100					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)	☐ 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 Soils Present? Yes ☐ No ☒
--	--	--

Remarks: No hydric soil indicators observed at W5-DP2.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☐ High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) ☐ Saturation (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13) ☐ Sediment Deposits (B2) ☐ Hydrogen Sulfide Odor (C1) ☐ Drift Deposits (B3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☐ 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 ☒
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed at W5-DP2.

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/4/2024
Applicant/Owner: Lewis County State: WA Sampling Point: W6-DP1
Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 1-2
Subregion (LRR): A Lat: 46.639098 Long: -122.772587 Datum: WGS84
Soil Map Unit Name: Chehalis Silty Clay 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: W6 is located in a mowed pasture. Indicators of hydrophytic vegetation, hydric soils, and wetland hydrology observed at W6-DP1. W6-DP1 is located in wetland.		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>30-ft diam.</u>)	Absolute % Cover	Dominant Species?	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</u> (A/B)
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-ft diam.</u>)				Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
5. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>5-ft diam.</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.
1. <u>Carex obnupta</u>	<u>25</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Holcus lanatus</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Juncus effusus</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
4. <u>Poa pratensis</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
5. <u> </u>	<u> </u>			
6. <u> </u>	<u> </u>			
7. <u> </u>	<u> </u>			
8. <u> </u>	<u> </u>			
9. <u> </u>	<u> </u>			
10. <u> </u>	<u> </u>			
11. <u> </u>	<u> </u>			
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>15-ft diam.</u>)				Hydrophytic Vegetation Present? Yes ☒ No ☐
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Vegetation at W6-DP1 passes the Dominance Test hydrophytic vegetation indicator.				

Project Site: Senn Rd

SOIL

Sampling Point: W6-DP1

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					Loam	
2-18	10YR 4/2	90	10YR 4/6	10	C	PL, M	Loam	Prominent redox concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

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 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 Soils Present? Yes ☒ No ☐
--	--

Remarks: Hydric soil indicator Depleted matrix (F3) observed at W6-DP1.

HYDROLOGY

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

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

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

Remarks: Primary wetland hydrology indicator Oxidized Rhizospheres along Living Roots observed at W6-DP1.
 Secondary wetland hydrology indicators Geomorphic Position (D2) and FAC-Neutral Test (D5) observed at W6-DP1.

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

Project Site: Senn Road City/County: /Lewis County Sampling Date: 12/4/2024
 Applicant/Owner: Lewis County State: WA Sampling Point: W6-DP2
 Investigator(s): J. Gray, K. Corrigan Section, Township, Range: S2 T13N R1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): A Lat: 46.639126 Long: -122.772511 Datum: WGS84
 Soil Map Unit Name: Chehalis Silty Clay 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: W6 is located in a mowed/grazed pasture. Indicators of hydrophytic vegetation observed at W6-DP2. No indicators of hydric soils or wetland hydrology observed at W6-DP2. W6-DP2 is not located in wetland.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-ft diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>--</u>	<u> </u>			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</u> (A/B)
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u>2</u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </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.
5. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: 5-ft diam.)				
1. <u>Agrostis sp.</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Poa pratensis</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	
3. <u> </u>	<u> </u>			
4. <u> </u>	<u> </u>			
5. <u> </u>	<u> </u>			
6. <u> </u>	<u> </u>			
7. <u> </u>	<u> </u>			
8. <u> </u>	<u> </u>			
9. <u> </u>	<u> </u>			
10. <u> </u>	<u> </u>			
11. <u> </u>	<u> </u>			
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		Hydrophytic Vegetation Present? Yes ☒ No ☐
Woody Vine Stratum (Plot size: 15-ft diam.)				
1. <u>--</u>	<u> </u>			
2. <u> </u>	<u> </u>			
50% = <u> </u> , 20% = <u> </u>	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Vegetation at W6-DP2 passes the Dominance Test hydrophytic vegetation indicator.				

SOIL

Profile Description: (Describe to the depth needed to document the presence or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	7.5YR 3/3	100					Loam	
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.			² Location: PL=Pore Lining, M=Matrix					
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)							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)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
☐	Thick Dark Surface (A12)		☐	Redox Dark Surface (F6)				
☐	Sandy Mucky Mineral (S1)		☐	Depleted Dark Surface (F7)				
☐	Sandy Gleyed Matrix (S4)		☐	Redox Depressions (F8)				
Restrictive Layer (if present):								
Type: _____						Hydric Soils Present? Yes ☐ No ☒		
Depth (inches): _____								
Remarks: No hydric soil indicators observed at W6-DP2.								

Wetland Hydrology Indicators:									
Primary Indicators (minimum of one required; check all that apply)					Secondary Indicators (2 or more required)				
☐ Surface Water (A1)					☐ Water-Stained Leaves (B9)				
☐ High Water Table (A2)					(except MLRA 1, 2, 4A, and 4B)				
☐ Saturation (A3)					☐ Salt Crust (B11)				
☐ Water Marks (B1)					☐ Aquatic Invertebrates (B13)				
☐ Sediment Deposits (B2)					☐ Hydrogen Sulfide Odor (C1)				
☐ Drift Deposits (B3)					☐ Oxidized Rhizospheres along Living Roots (C3)				
☐ Algal Mat or Crust (B4)					☐ Presence of Reduced Iron (C4)				
☐ Iron Deposits (B5)					☐ Recent Iron Reduction in Tilled Soils (C6)				
☐ Surface Soil Cracks (B6)					☐ Stunted or Stresses Plants (D1) (LRR A)				
☐ Inundation Visible on Aerial Imagery (B7)					☐ Other (Explain in Remarks)				
☐ Sparsely Vegetated Concave Surface (B8)									
Field Observations:									
Surface Water Present?	Yes	☐	No	☒	Depth (inches):				
Water Table Present?	Yes	☐	No	☒	Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):				
					Wetland Hydrology Present?				
					Yes ☐ No ☒				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks: No wetland hydrology indicators observed at W6-DP2.									

Appendix D: Wetland Ratings

Wetland name or number W1

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 1 Date of site visit: 12/3/2024
Rated by K. Corrigan & J. Gray Trained by Ecology? ☒ Yes ☐ No Date of training 2022
HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Y ☒ N

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

Source of base aerial photo/map Google

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

1. Category of wetland based on FUNCTIONS

 Category I – Total score = 23 - 27
 Category II – Total score = 20 - 22
 X Category III – Total score = 16 - 19
 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H M <u>L</u>	H <u>M</u> L	H M <u>L</u>	
Landscape Potential	H <u>M</u> L	H <u>M</u> L	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	<u>H</u> M L	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
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	NA

Wetland name or number W1

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
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 total 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 unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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 150 ft buffer (<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 total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, 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 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2

☐ YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☒ NO – **Saltwater Tidal Fringe (Estuarine)**

☐ YES – **Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3

☐ YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4

☐ YES – The wetland class is **Lake Fringe (Lacustrine Fringe)**

4. 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 sheet flow, or in a swale without distinct banks,
☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5

☐ 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 ft deep).

Wetland name or number W1

5. 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 2 years.

NO – go to 6

YES – The wetland class is **Riverine**

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

6. 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 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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.

Wetland name or number W1

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. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		2
D 1.2. <u>The soil 2 in. below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 <u>No = 0</u>		0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > 1/2 of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0		1
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is ≥ 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0		0
Total for D 1		3

Rating of Site Potential If score is: 12-16 = H 6-11 = M X 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 = 1 <u>No = 0</u>	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<u>Yes = 1</u> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 <u>No = 0</u>	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 <u>No = 0</u>	0
Total for D 2		1

Rating of Landscape Potential If score is: 3 or 4 = H X 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, lake, or marine water that is on the 303(d) list?	Yes = 1 <u>No = 0</u>	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 <u>No = 0</u>	0
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 in development or in effect for the basin in which the unit is found.)	<u>Yes = 2</u> No = 0	2
Total for D 3		2

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

HUC12: 171001030203 - North Fork Newaukum River

Upper Chehalis River Bacteria TMDL, Upper Chehalis River Basin Temperature TMDL,
& Upper Chehalis River Basin Dissolved Oxygen TMDL

Wetland name or number W1

DEPRESSIONAL AND FLATS 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. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet <u>points = 2</u> Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0		2
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 if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water <u>points = 1</u> Marks of ponding less than 0.5 ft (6 in) points = 0		1
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit <u>points = 5</u> The area of the basin is 10 to 100 times the area of the unit <u>points = 3</u> The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5		3
Total for D 4		6

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 <u>No = 0</u>		0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? <u>Yes = 1</u> No = 0		1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 <u>No = 0</u>		0
Total for D 5		1

Rating of Landscape Potential If score is: 3 = H X 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. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met.</u> The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): - Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2 - Surface flooding problems are in a sub-basin farther downgradient. <u>points = 1</u> - Flooding from groundwater is an issue in the sub-basin. 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. <i>Explain why</i> _____ points = 0 - There are no problems with flooding downstream of the wetland. points = 0		1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 <u>No = 0</u>		0
Total for D 6		1

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

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

☐ Aquatic bed

4 structures or more: points = 4

☒ Emergent

3 structures: points = 2

☒ Scrub-shrub (areas where shrubs have > 30% cover)

2 structures: points = 1

☐ Forested (areas where trees have > 30% cover)

1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

☐ Permanently flooded or inundated

4 or more types present: points = 3

☐ Seasonally flooded or inundated

3 types present: points = 2

☒ Occasionally flooded or inundated

2 types present: points = 1

☒ Saturated only

1 type present: points = 0

☐ Permanently flowing stream or river in, or adjacent to, the wetland

☐ Intermittently or seasonally flowing stream in, or adjacent to, the wetland

☐ **Lake Fringe wetland**

2 points

☐ **Freshwater tidal wetland**

2 points

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species

points = 2

5 - 19 species

points = 1

< 5 species

points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plant classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



None = 0 points



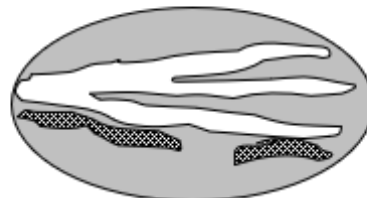
Low = 1 point



Moderate = 2 points



All three diagrams
in this row
are **High = 3 points**



1

Wetland name or number W1

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. The number of checks is the number of points.

- ☒ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).
☐ Standing snags (dbh > 4 in.) within the wetland
☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
☒ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)

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 X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.

- Calculate: % relatively undisturbed habitat 15 + [(% moderate and low intensity land uses)/2] 11.2 = 26.2 %
Total accessible habitat is:
> 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

2

H 2.2. Total habitat in 1 km Polygon around the wetland.

- Calculate: % relatively undisturbed habitat 22.6 + [(% moderate and low intensity land uses)/2] 21.7 = 44.3 %
Total habitat > 50% of Polygon points = 3
Total habitat 10-50% and in 1-3 patches points = 2
Total habitat 10-50% and > 3 patches points = 1
Total habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon:

- > 50% of 1 km Polygon is high intensity land use points = (-2)
≤ 50% of 1 km Polygon is high intensity points = 0

0

Total for H 2

Add the points in the boxes above

3

Rating of Landscape Potential If score is: 4-6 = H X 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 next page)
☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
☐ It is mapped as a location for an individual WDFW Priority Species
☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data
☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan
Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1
Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: X 2 = H 1 = M 0 = L

Record the rating on the first page

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **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.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. 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 of the Cascade crest.

¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

Wetland name or number W1

- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- ☒ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☒ **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.
- **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.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are <i>Spartina</i> , see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer ? ¹³⁵ Yes = Category I No – Go to SC 2.2 SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination , ¹³⁶ Go to SC 2.3 No = Not a WHCV SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit 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 3.3 No = Not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Category I bog No – Go to SC 3.4 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 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, 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 4 provide more than 30% of the cover under the canopy? Yes = Category I bog No = Not a bog	Cat. I

¹³⁵ <https://www.dnr.wa.gov/NHPdata>¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? <i>If you answer YES, you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) — The lagoon retains some of its <u>surface water at low tide</u> during spring tides Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/10 ac (4350 ft²) Yes = Category I No = Category II	Cat. I Cat. II
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer YES, you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to SC 6.1 No = Not an interdunal wetland for rating SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat I Cat. II Cat. III Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

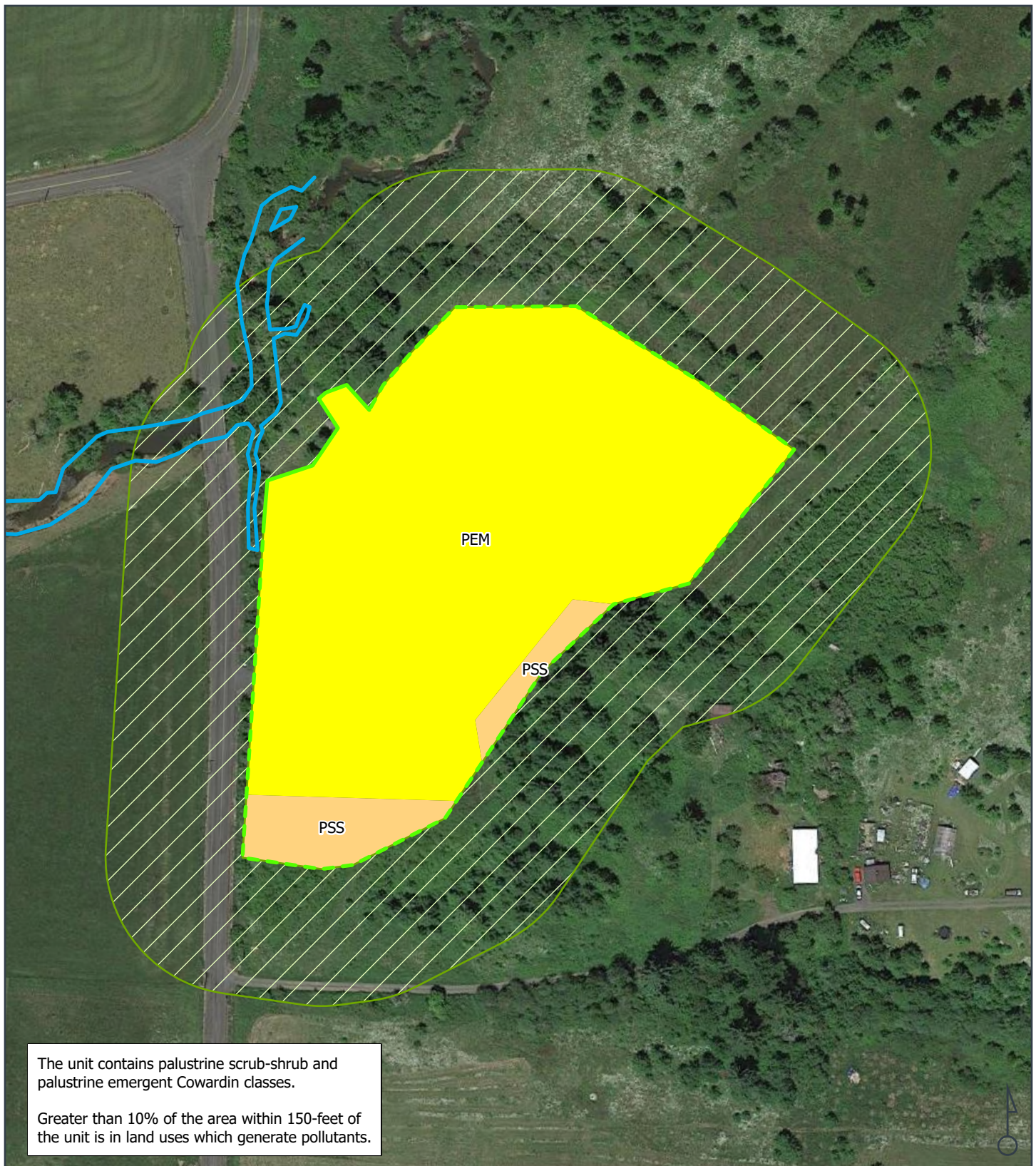


FIGURE 1
COWARDIN CLASSES & 150-FT BUFFER
WETLAND 1
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Palustrine Scrub-Shrub (PSS)
- Palustrine Emergent (PEM)
- Wetland Buffer (150 ft)
- Delineated Wetland Boundary
- Estimated Wetland Boundary
- Ordinary High Water

0 150 ft

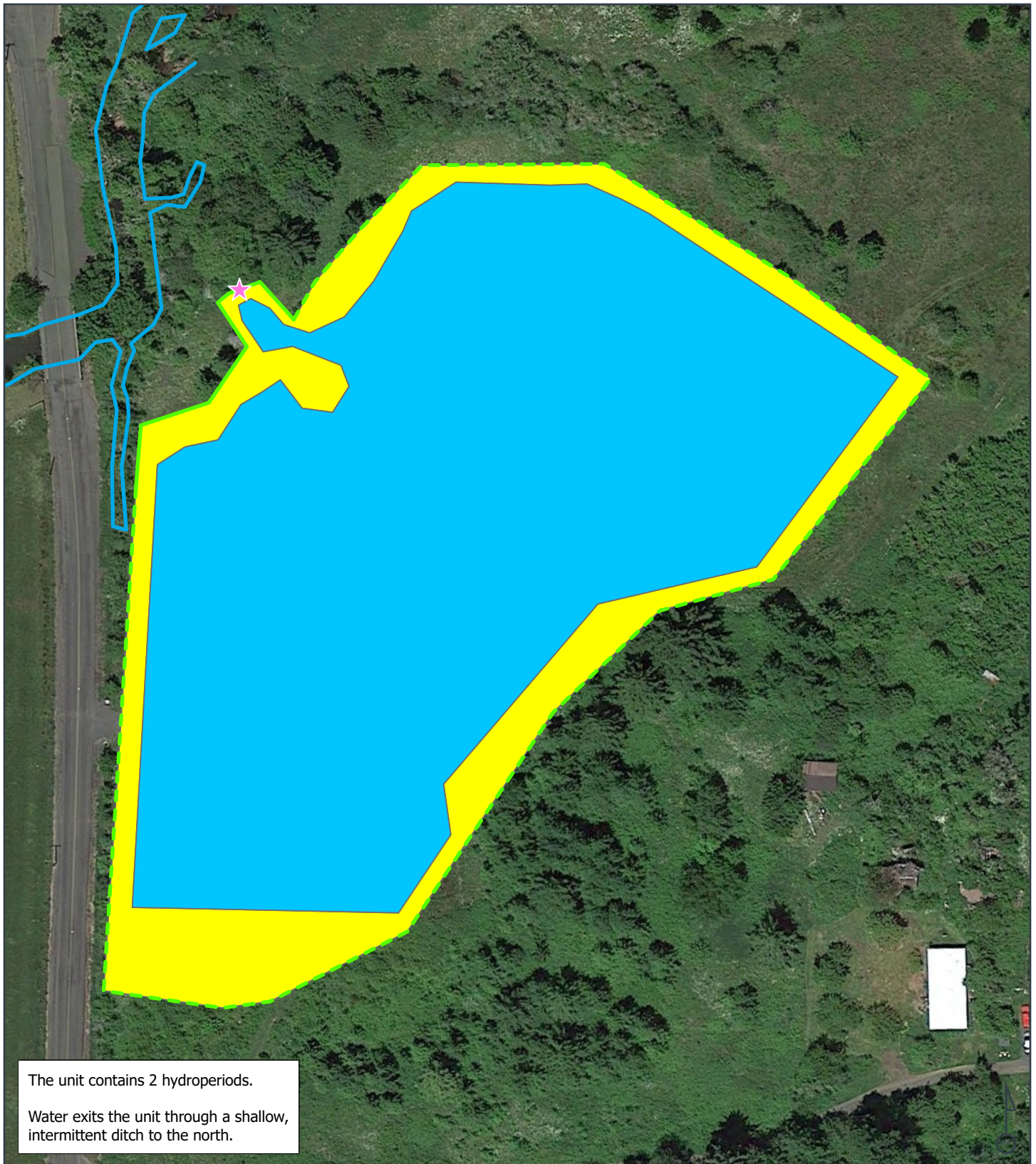


FIGURE 2
HYDROPERIODS
WETLAND 1
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Saturated Only
- Occasionally Flooded
- Wetland Outlet
- Delineated Wetland Boundary
- Estimated Wetland Boundary
- Ordinary High Water

0

ft

 100

Data Sources:
 Date: 1/23/2025
 Disclaimer: This data is not to survey accuracy and is meant for planning purposes only.
 K:\PROJECT\21500\21588A\04 CAD\GIS\MXD\WetlandRatings\Wetland1_Rating.aprx



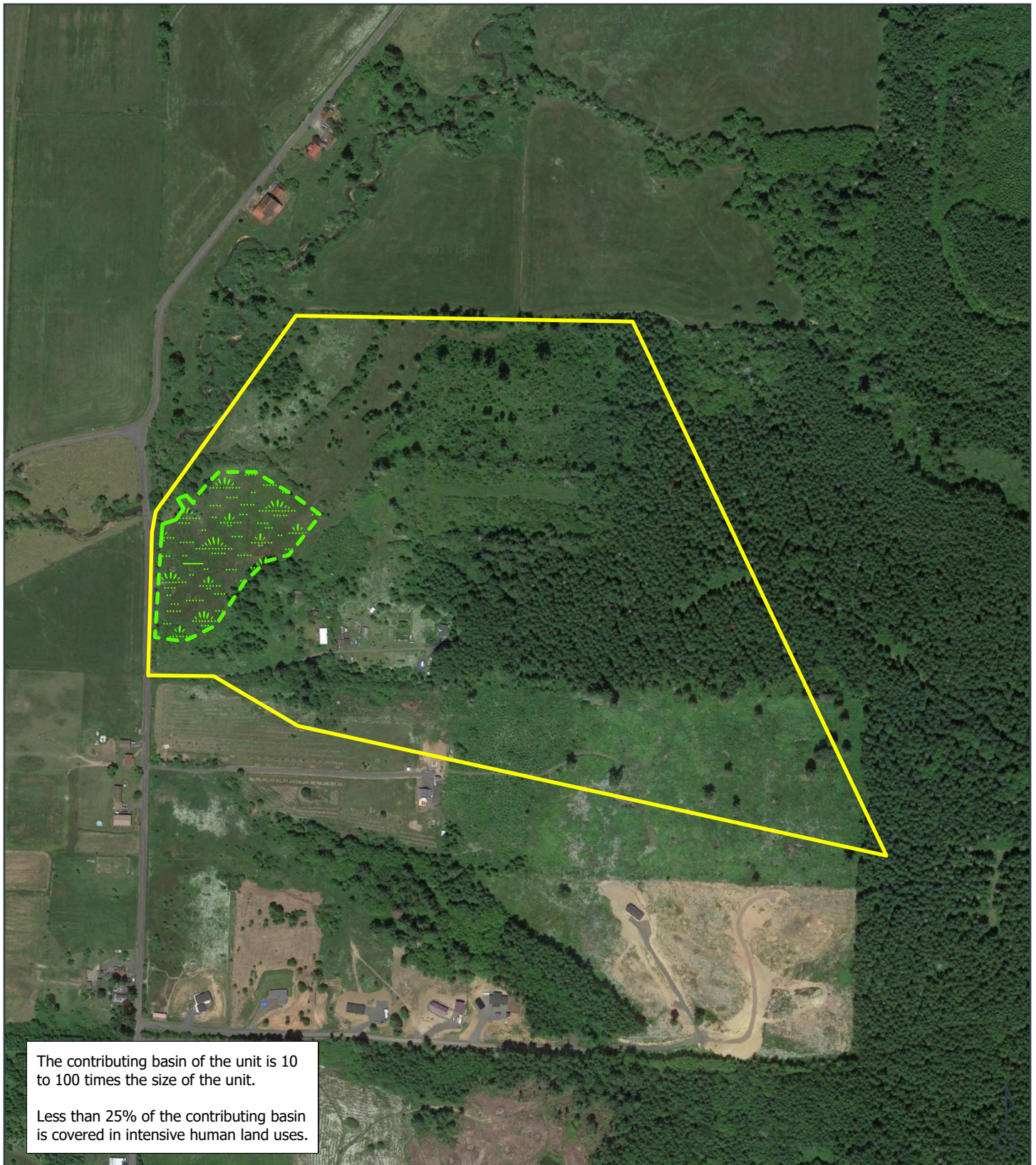


FIGURE 3
CONTRIBUTING BASIN
WETLAND 1
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Contributing Basin
- Delineated Wetland Boundary
- Estimated Wetland Boundary

0 500 ft

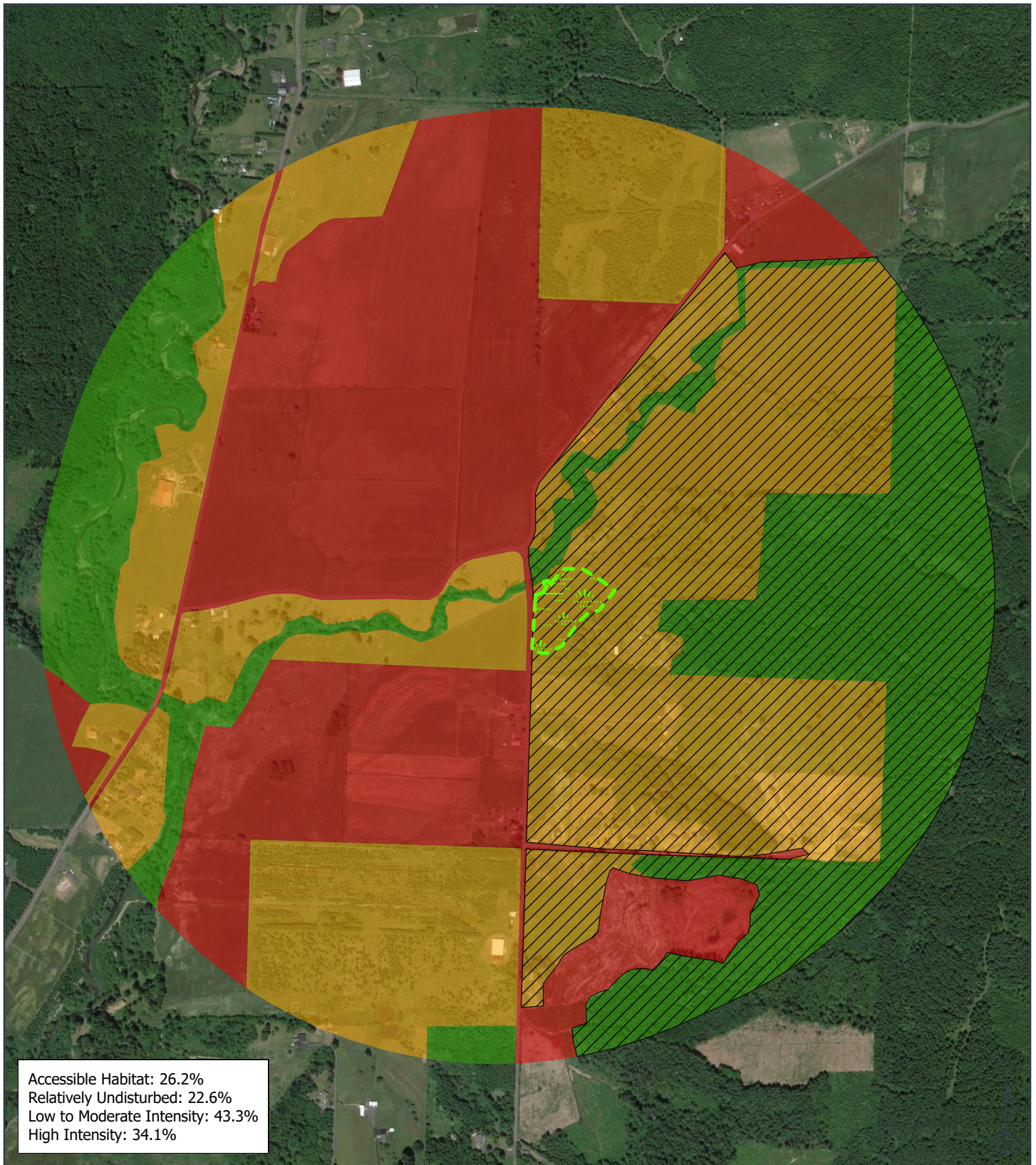


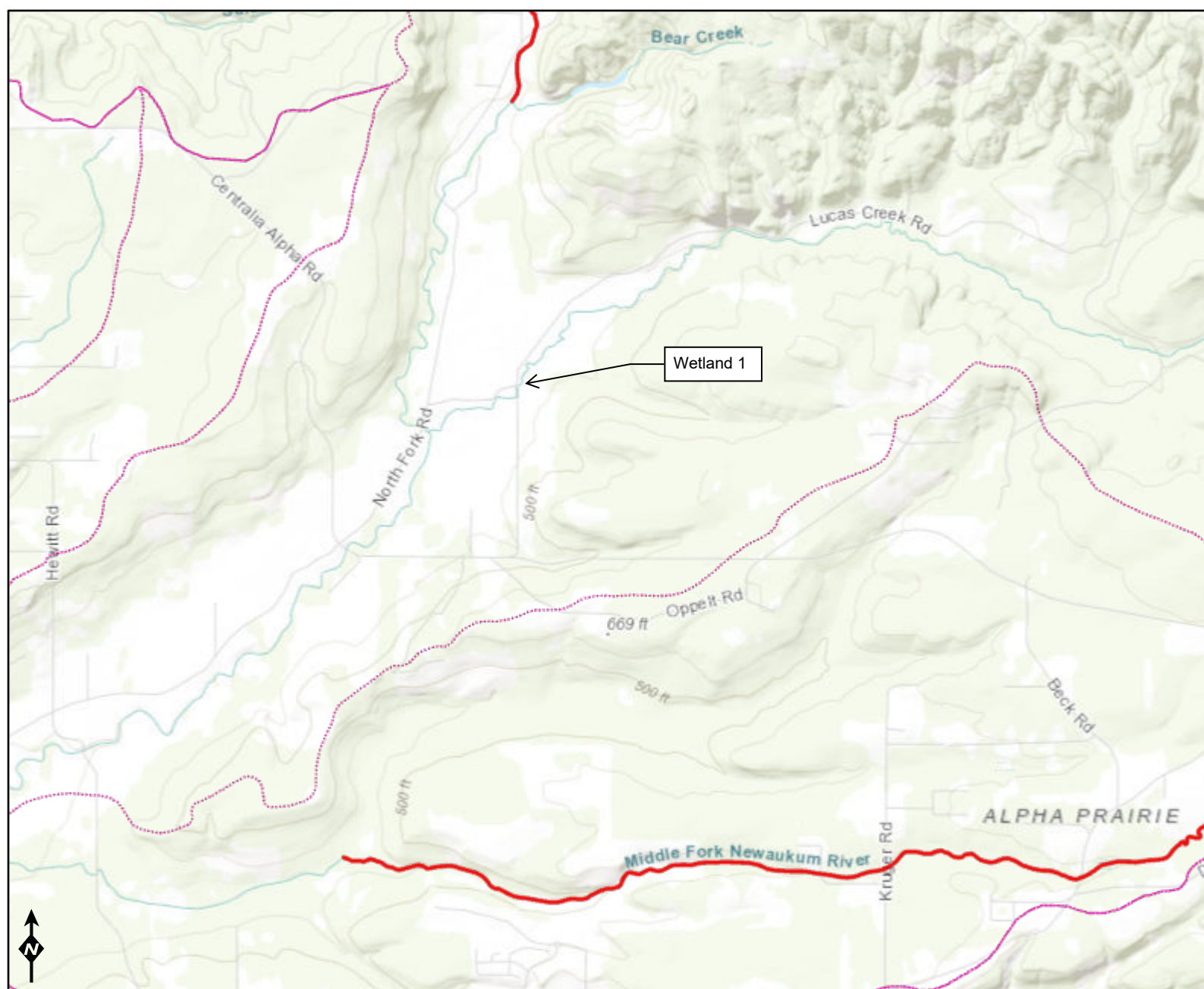
FIGURE 4
LAND USE INTENSITY
WETLAND 1
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Accessible Habitat
- High Intensity
- Low to Moderate Intensity
- Relatively Undisturbed
- Delineated Wetland Boundary
- Estimated Wetland Boundary
- Wetland Area

0 1,000 ft

Figure 5 - 303(d) Listed Waters

**Assessed Water/Sediment****Water**

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

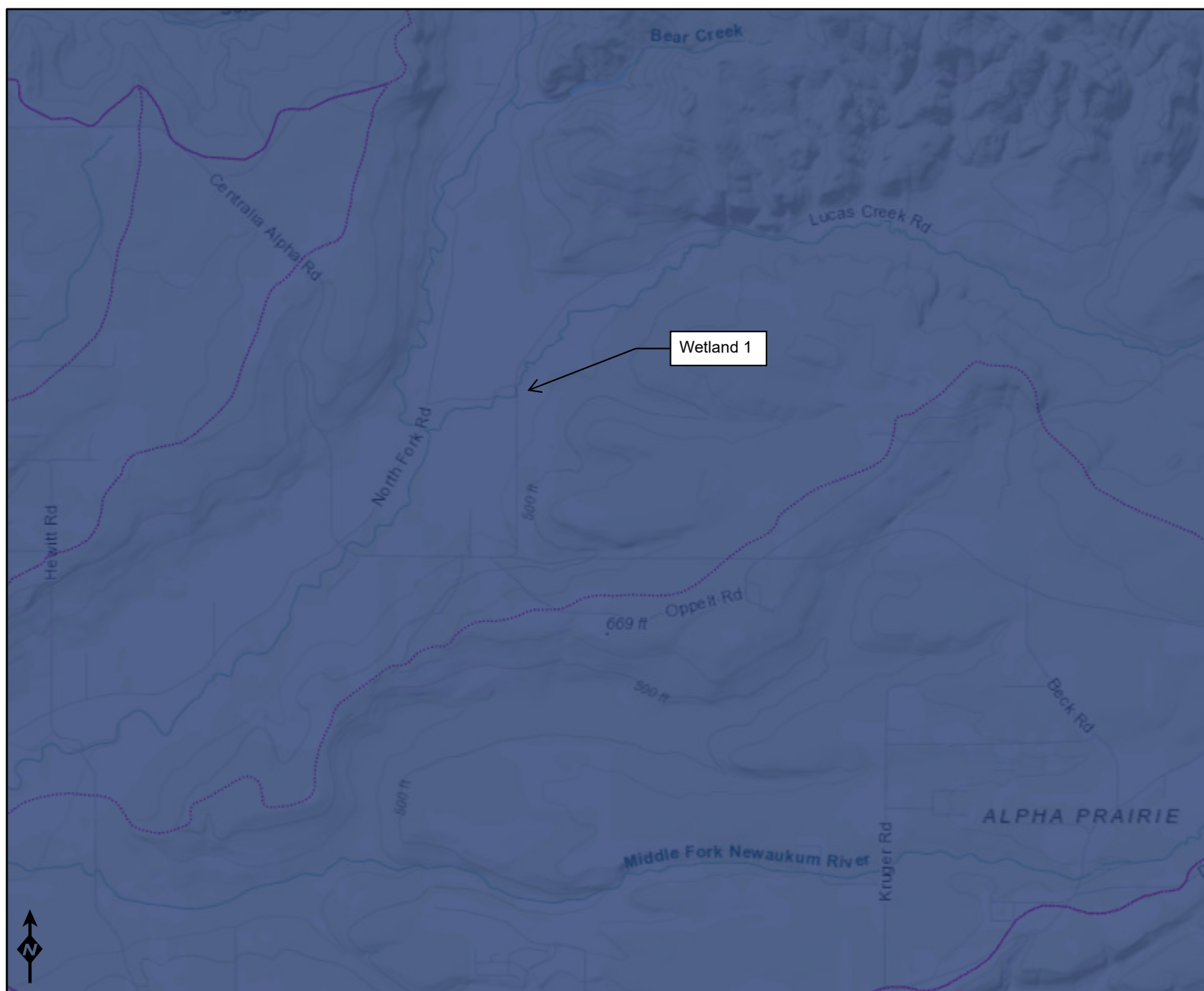
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Figure 6 - TMDLs

**WQ Improvement Projects**

- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Upper Chehalis River Bacteria TMDL

Upper Chehalis River Basin
Temperature TMDL

Upper Chehalis River Basin
Dissolved Oxygen TMDL

Wetland name or number W2

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 2 Date of site visit: 12/3/2024
Rated by K. Corrigan & J. Gray Trained by Ecology? ☒ Yes ☐ No Date of training 2022
HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Y ☒ N

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

Source of base aerial photo/map Google

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

1. Category of wetland based on FUNCTIONS

 Category I – Total score = 23 - 27
 Category II – Total score = 20 - 22
☒ Category III – Total score = 16 - 19
 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H M <u>L</u>	H <u>M</u> L	H M <u>L</u>	
Landscape Potential	H <u>M</u> L	H <u>M</u> L	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	<u>H</u> M L	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
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	NA

Wetland name or number W2

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
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 total 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 unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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 150 ft buffer (<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 total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, 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 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2

☐ YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☒ NO – **Saltwater Tidal Fringe (Estuarine)**

☐ YES – **Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3

☐ YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4

☐ YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. 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 sheet flow, or in a swale without distinct banks,
☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5

☐ 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 ft deep).

Wetland name or number W2

5. 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 2 years.

NO – go to 6

YES – The wetland class is **Riverine**

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

6. 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 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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.

Wetland name or number W2

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. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		2
D 1.2. <u>The soil 2 in. below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 <u>No = 0</u>		0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > 1/2 of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0		0
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is ≥ 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0		0
Total for D 1		2

Rating of Site Potential If score is: 12-16 = H 6-11 = M X 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?	<u>Yes = 1</u> No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<u>Yes = 1</u> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 <u>No = 0</u>	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 <u>No = 0</u>	0
Total for D 2		2

Rating of Landscape Potential If score is: 3 or 4 = H X 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, lake, or marine water that is on the 303(d) list?	Yes = 1 <u>No = 0</u>	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 <u>No = 0</u>	0
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 in development or in effect for the basin in which the unit is found.)	<u>Yes = 2</u> No = 0	2
Total for D 3		2

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

HUC12: 171001030203 - North Fork Newaukum River

Upper Chehalis River Bacteria TMDL, Upper Chehalis River Basin Temperature TMDL,
& Upper Chehalis River Basin Dissolved Oxygen TMDL

Wetland name or number W2

DEPRESSIONAL AND FLATS 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. <u>Characteristics of surface water outflows from the wetland:</u>			
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2	
Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet	points = 2		
Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch	points = 1		
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0		
D 4.2. <u>Depth of storage during wet periods:</u> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.			
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	1	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5		
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3		
The wetland is a "headwater" wetland	points = 3		
Wetland is flat but has small depressions on the surface that trap water	points = 1		
Marks of ponding less than 0.5 ft (6 in)	points = 0		
D 4.3. <u>Contribution of the wetland to storage in the watershed:</u> Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.			
The area of the basin is less than 10 times the area of the unit	points = 5	5	
The area of the basin is 10 to 100 times the area of the unit	points = 3		
The area of the basin is more than 100 times the area of the unit	points = 0		
Entire wetland is in the Flats class	points = 5		
Total for D 4		Add the points in the boxes above	8

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

D 5.0. Does the landscape have the potential to support 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 generate excess runoff?	Yes = 1 No = 0	1	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	0	
Total for D 5		Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3 = H X 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. Is <u>the unit in a landscape that has flooding problems</u> ? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met.</u>			
The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):			
Flooding occurs in a sub-basin that is immediately downgradient of unit.	points = 2	1	
Surface flooding problems are in a sub-basin farther downgradient.	points = 1		
Flooding from groundwater is an issue in the sub-basin.	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. <i>Explain why</i> _____	points = 0		
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 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 X 1 = M 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

☐ Aquatic bed

4 structures or more: points = 4

☒ Emergent

3 structures: points = 2

☐ Scrub-shrub (areas where shrubs have > 30% cover)

2 structures: points = 1

☐ Forested (areas where trees have > 30% cover)

1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

☐ Permanently flooded or inundated

4 or more types present: points = 3

☐ Seasonally flooded or inundated

3 types present: points = 2

☒ Occasionally flooded or inundated

2 types present: points = 1

☒ Saturated only

1 type present: points = 0

☐ Permanently flowing stream or river in, or adjacent to, the wetland

☐ Intermittently or seasonally flowing stream in, or adjacent to, the wetland

☐ Lake Fringe wetland

2 points

☐ Freshwater tidal wetland

2 points

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species

points = 2

5 - 19 species

points = 1

< 5 species

points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plant classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



None = 0 points



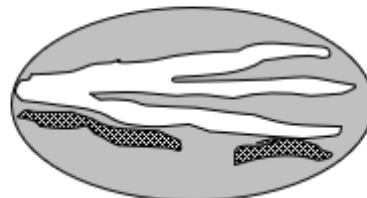
Low = 1 point



Moderate = 2 points



All three diagrams
in this row
are High = 3 points



0

Wetland name or number W2

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. The number of checks is the number of points.

- ☐ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).
- ☐ Standing snags (dbh > 4 in.) within the wetland
- ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- ☒ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)

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 X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.

- Calculate: % relatively undisturbed habitat 1.6 + [(% moderate and low intensity land uses)/2] 2.2 = 3.8 %
- Total accessible habitat is:
- > 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

0

H 2.2. Total habitat in 1 km Polygon around the wetland.

- Calculate: % relatively undisturbed habitat 22.6 + [(% moderate and low intensity land uses)/2] 21.7 = 44.3 %
- Total habitat > 50% of Polygon points = 3
- Total habitat 10-50% and in 1-3 patches points = 2
- Total habitat 10-50% and > 3 patches points = 1
- Total habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon:

- > 50% of 1 km Polygon is high intensity land use points = (-2)
- ≤ 50% of 1 km Polygon is high intensity points = 0

0

Total for H 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 4-6 = H X 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 next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW Priority Species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan
- Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1
- Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: X 2 = H 1 = M 0 = L

Record the rating on the first page

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **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.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **X Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. 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 of the Cascade crest.

¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

Wetland name or number W2

- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- ☒ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☒ **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.
- **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.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are <i>Spartina</i> , see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer ? ¹³⁵ Yes = Category I No – Go to SC 2.2 SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination , ¹³⁶ Go to SC 2.3 No = Not a WHCV SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit 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 3.3 No = Not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Category I bog No – Go to SC 3.4 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 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, 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 4 provide more than 30% of the cover under the canopy? Yes = Category I bog No = Not a bog	Cat. I

¹³⁵ <https://www.dnr.wa.gov/NHPdata>¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? <i>If you answer YES, you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) — The lagoon retains some of its <u>surface water at low tide</u> during spring tides Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/10 ac (4350 ft²) Yes = Category I No = Category II	Cat. I Cat. II
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer YES, you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to SC 6.1 No = Not an interdunal wetland for rating SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat I Cat. II Cat. III Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

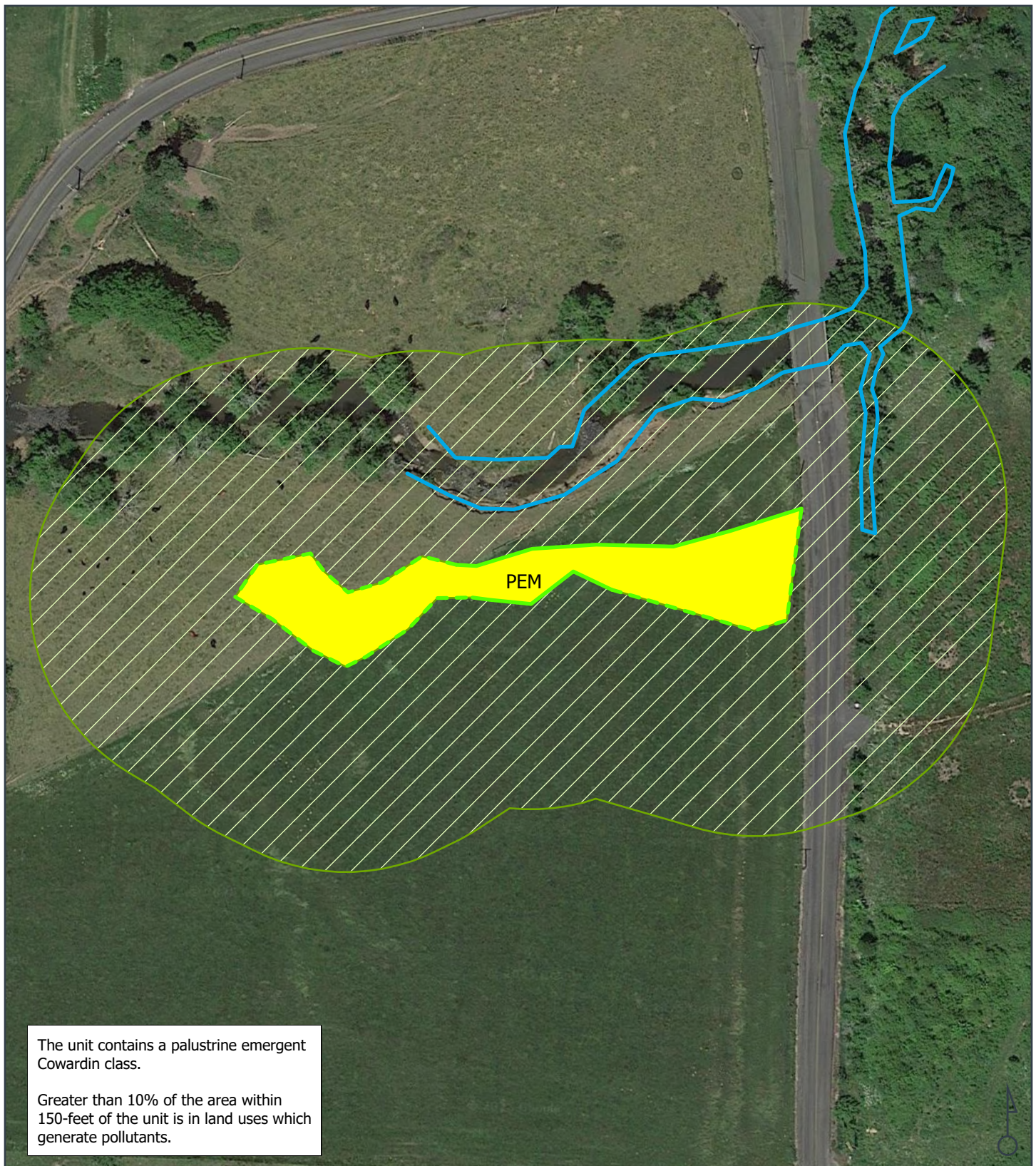


FIGURE 1
COWARDIN CLASSES & 150-FT BUFFER
WETLAND 1
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Palustrine Emergent (PEM)
- Wetland Buffer (150 ft)
- Delineated Wetland Boundary
- Estimated Wetland Boundary
- Ordinary High Water

0 100 ft

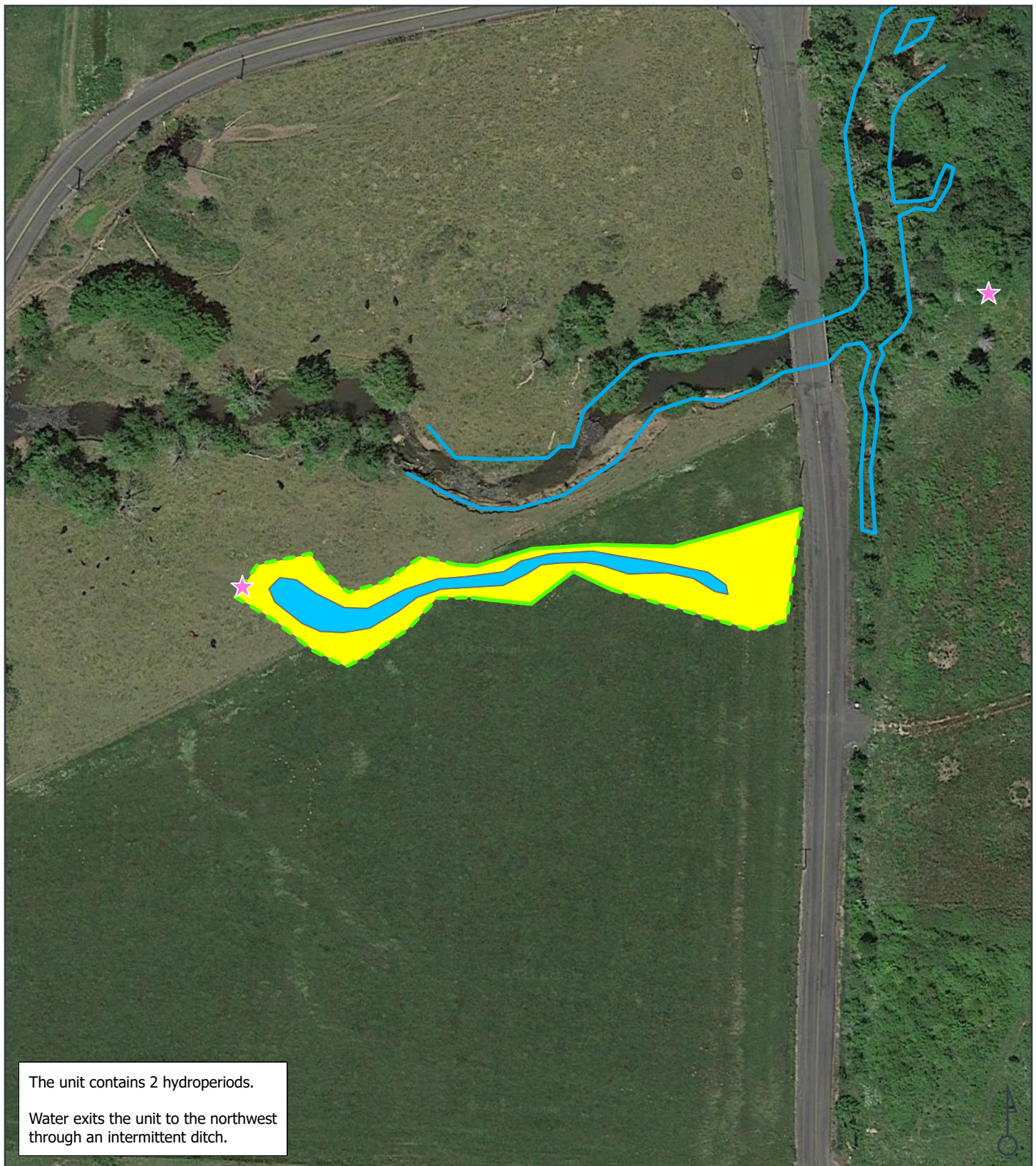


FIGURE 2 HYDROPERIODS WETLAND 2

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Saturated Only
- Occasionally Flooded
- ★ Wetland Outlet
- Delineated Wetland Boundary
- Estimated Wetland Boundary
- Ordinary High Water

0 100 ft

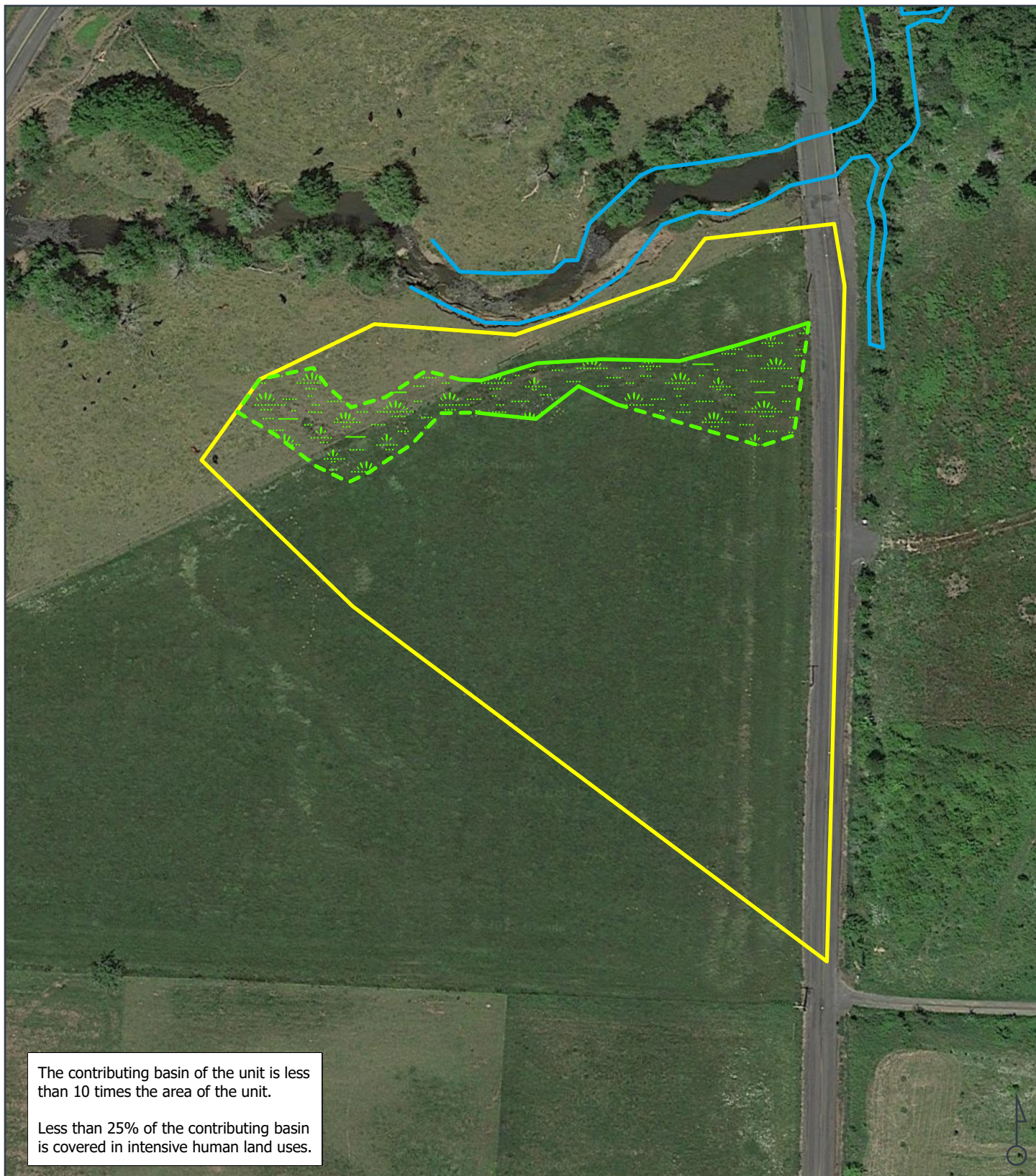


FIGURE 3
CONTRIBUTING BASIN
WETLAND 2
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- ▬ Contributing Basin
- ▬ Delineated Wetland Boundary
- - - Estimated Wetland Boundary
- ... Wetland Area
- ▬ Ordinary High Water

0 100 ft

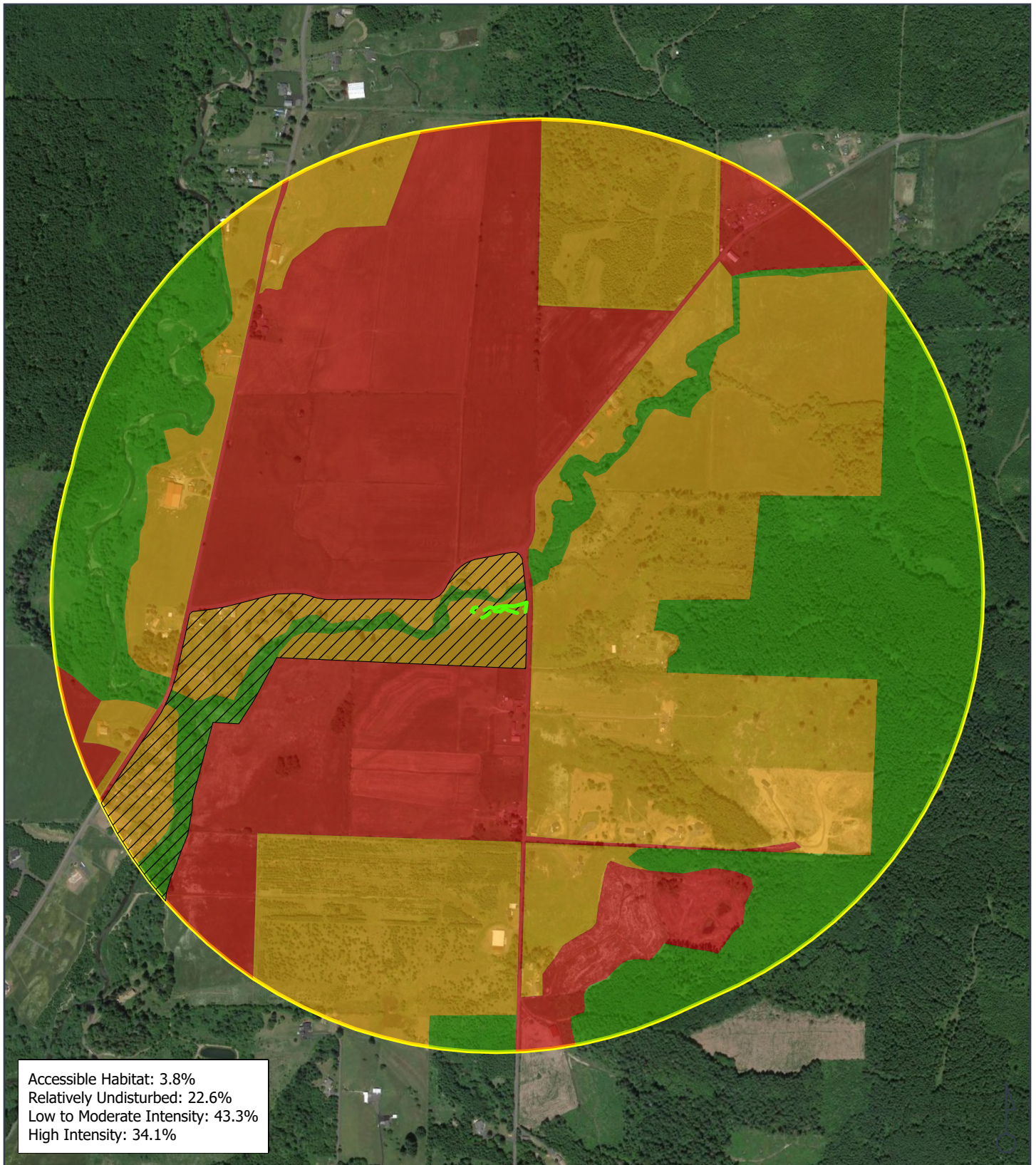


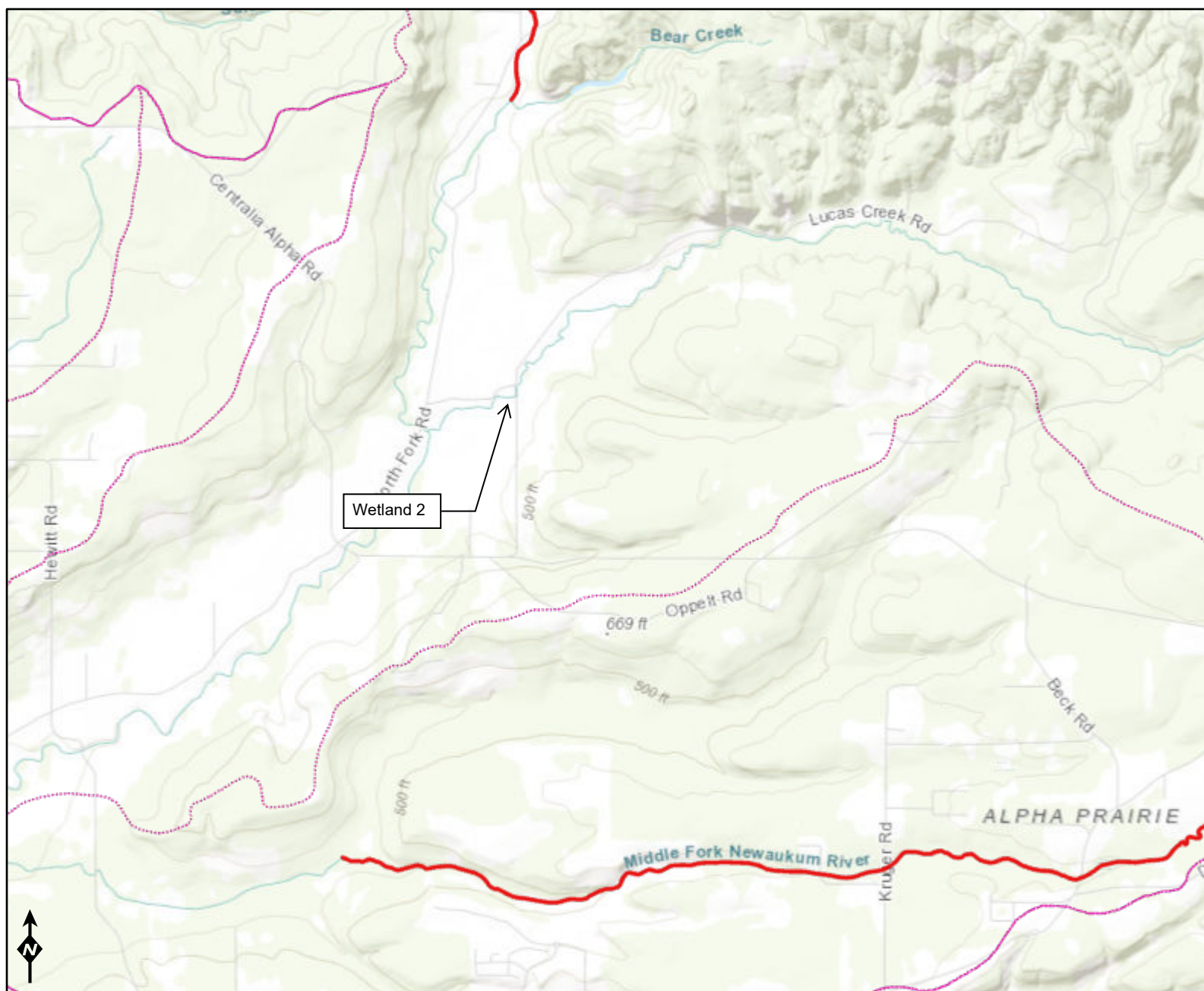
FIGURE 4
LAND USE INTENSITY
WETLAND 2
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Accessible Habitat
- High Intensity
- Low to Moderate Intensity
- Relatively Undisturbed
- Delineated Wetland Boundary
- Estimated Wetland Boundary
- WetlandArea

0 1,000 ft

Figure 5 - 303(d) Listed Waters

**Assessed Water/Sediment****Water**

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

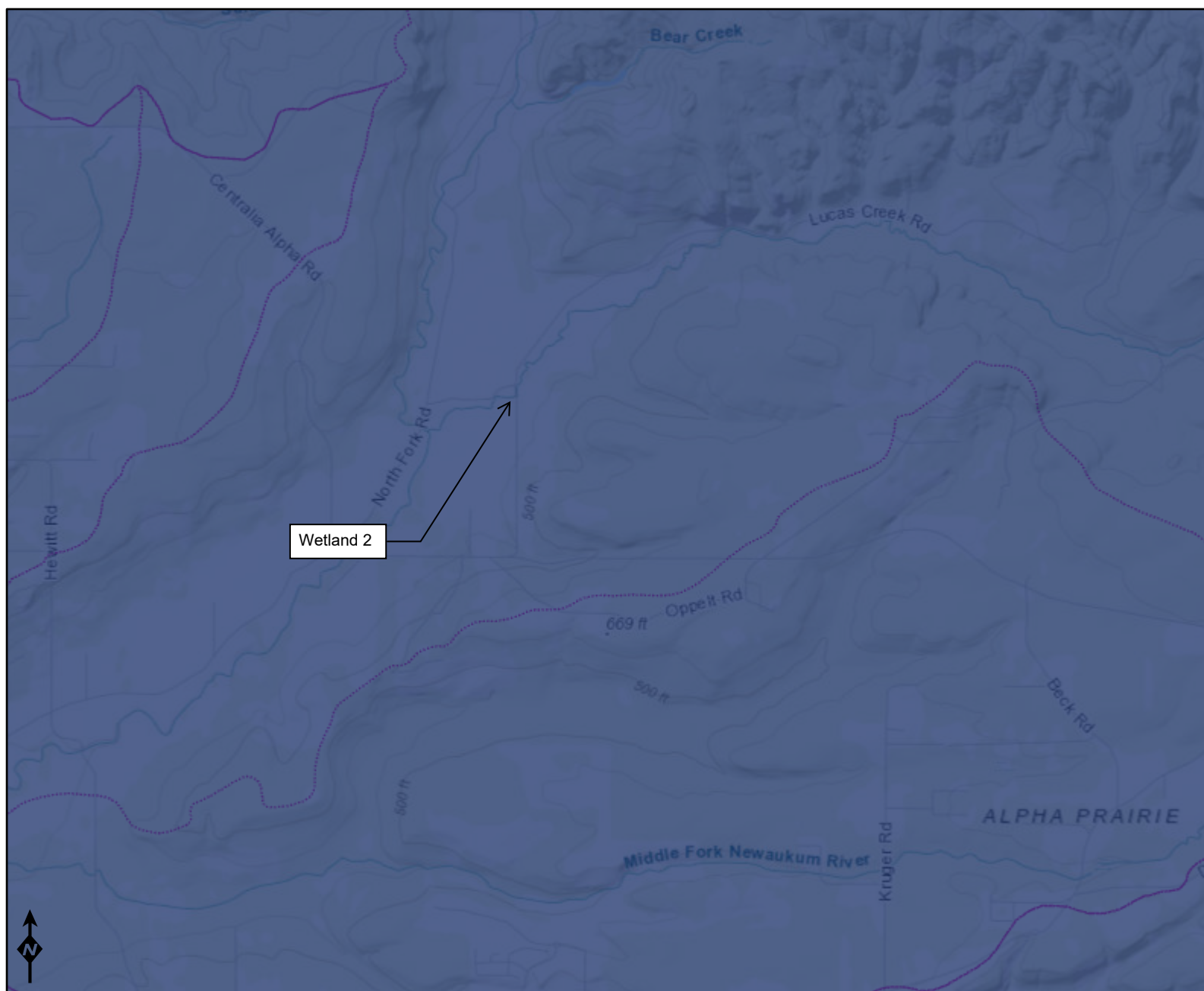
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Figure 6 - TMDLs

**WQ Improvement Projects**

- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Upper Chehalis River Bacteria TMDL

Upper Chehalis River Basin
Temperature TMDL

Upper Chehalis River Basin
Dissolved Oxygen TMDL

Wetland name or number W3

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 3 Date of site visit: 12/3/2024

Rated by K. Corrigan & J. Gray Trained by Ecology? ☒ Yes ☐ No Date of training 2022

HGM Class used for rating Riverine Wetland has multiple HGM classes? ☐ Y ☒ N

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

Source of base aerial photo/map Google

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

1. Category of wetland based on FUNCTIONS

 Category I – Total score = 23 - 27

 Category II – Total score = 20 - 22

☒ Category III – Total score = 16 - 19

 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H ☐ M ☒ L	H ☐ M ☒ L	H ☐ M ☒ L	
Landscape Potential	H ☐ M ☒ L	H ☐ M ☒ L	H ☐ M ☒ L	
Value	☒ H ☐ M ☐ L	H ☐ M ☒ L	☒ H ☐ M ☐ L	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
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	NA

Maps and figures required to answer questions correctly for Western Washington**Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
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 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	2
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	2
Map of the contributing basin	R 2.2, R 2.3, R 5.2	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
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 total 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 unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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 150 ft buffer (<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 total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, 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 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

- ___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
___ At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. 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 sheet flow, or in a swale without distinct banks,
___ The water leaves the wetland **without being impounded**.

NO – go to 5

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 ft deep).

Wetland name or number W3

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

X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
X The overbank flooding occurs at least once every 2 years.

NO – go to 6

YES – The wetland class is **Riverine**

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

6. 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 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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.

Wetland name or number W3

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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 $>3/4$ area of wetland	points = 8	
Depressions cover $> 1/2$ area of wetland	points = 4	
Depressions present but cover $\leq 1/2$ area of wetland	points = 2	2
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with $>90\%$ cover at person height, not Cowardin classes)		
Trees or shrubs $> 2/3$ area of the wetland	points = 8	
Trees or shrubs $> 1/3$ area of the wetland	points = 6	
Herbaceous plants (> 6 in. high) $> 2/3$ area of the wetland	points = 6	6
Herbaceous plants (> 6 in. high) $> 1/3$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland	points = 0	
Total for R 1	Add the points in the boxes above	8

Rating of Site Potential If score is: 12-16 = H X 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	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Other sources _____	Yes = 1 No = 0	0
Total for R 2	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3-6 = H X 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. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
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 in development or in effect 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	2

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

Record the rating on the first page

HUC12: 171001030203 - North Fork Newaukum River

Upper Chehalis River Bacteria TMDL, Upper Chehalis River Basin Temperature TMDL,
& Upper Chehalis River Basin Dissolved Oxygen TMDL

Wetland name or number W3

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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 20 Wetland width = 5 ft points = 9 If the ratio is 10-20 Stream width = 20 ft points = 6 If the ratio is 5-<10 5/20 = 0.25 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 <u>points = 1</u>	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 <u>NOT</u> Cowardin classes). Forest or shrub for >¹/₃ area OR emergent plants > ²/₃ area points = 7 Forest or shrub for > ¹/₁₀ area OR emergent plants > ¹/₃ area points = 4 Plants do not meet above criteria <u>points = 0</u>	0
Total for R 4	1

Rating of Site Potential If score is: 12-16 = H 6-11 = M X 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 <u>No = 1</u>	1
R 5.2. Does the upgradient watershed include a UGA or incorporated area? Yes = 1 <u>No = 0</u>	0
R 5.3. Is the upgradient stream or river controlled by dams? Yes = 0 <u>No = 1</u>	1
Total for R 5	2

Rating of Landscape Potential If score is: 3 = H X 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 downgradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient <u>points = 1</u> No flooding problems anywhere downstream points = 0	1
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 <u>No = 0</u>	0
Total for R 6	1

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

Record the rating on the first page

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

☐ Aquatic bed

4 structures or more: points = 4

☒ Emergent

3 structures: points = 2

☐ Scrub-shrub (areas where shrubs have > 30% cover)

2 structures: points = 1

☐ Forested (areas where trees have > 30% cover)1 structure: points = 0*If the unit has a Forested class, check if:*☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

☐ Permanently flooded or inundated

4 or more types present: points = 3

☐ Seasonally flooded or inundated3 types present: points = 2☒ Occasionally flooded or inundated2 types present: points = 1☐ Saturated only

1 type present: points = 0

☒ Permanently flowing stream or river in, or adjacent to, the wetland☐ Intermittently or seasonally flowing stream in, or adjacent to, the wetland☐ **Lake Fringe wetland****2 points**☐ **Freshwater tidal wetland****2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species

points = 2

5 - 19 species

points = 1

< 5 species

points = 0

0

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plant classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



None = 0 points

Low = 1 point

Moderate = 2 points



All three diagrams
in this row
are **High** = 3 points



1

Wetland name or number W3

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. The number of checks is the number of points.

- ☐ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).
- ☐ Standing snags (dbh > 4 in.) within the wetland
- ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)

0

Total for H 1

Add the points in the boxes above

2

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.

- Calculate:* % relatively undisturbed habitat 15 + [(% moderate and low intensity land uses)/2] 11.2 = 26.2 %
- Total accessible habitat is:
- > 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

2

H 2.2. Total habitat in 1 km Polygon around the wetland.

- Calculate:* % relatively undisturbed habitat 22.6 + [(% moderate and low intensity land uses)/2] 21.7 = 44.3 %
- Total habitat > 50% of Polygon points = 3
- Total habitat 10-50% and in 1-3 patches points = 2
- Total habitat 10-50% and > 3 patches ~~points = 1~~
- Total habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon:

- > 50% of 1 km Polygon is high intensity land use points = (- 2)
- ≤ 50% of 1 km Polygon is high intensity ~~points = 0~~

0

Total for H 2

Add the points in the boxes above

3

Rating of Landscape Potential If score is: 4-6 = H X 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 next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW Priority Species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan
- Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1
- Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: X 2 = H 1 = M 0 = L

Record the rating on the first page

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **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.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. 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 of the Cascade crest.

¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

Wetland name or number W3

- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- ☒ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☒ **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.
- **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.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are <i>Spartina</i> , see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer ? ¹³⁵ Yes = Category I No – Go to SC 2.2 SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination , ¹³⁶ Go to SC 2.3 No = Not a WHCV SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit 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 3.3 No = Not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Category I bog No – Go to SC 3.4 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 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, 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 4 provide more than 30% of the cover under the canopy? Yes = Category I bog No = Not a bog	Cat. I

¹³⁵ <https://www.dnr.wa.gov/NHPdata>¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? <i>If you answer YES, you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) <u>exceeding 21 in. (53 cm).</u> Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) — The lagoon retains some of its <u>surface water at low tide</u> during spring tides Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/10 ac (4350 ft²) Yes = Category I No = Category II	Cat. I Cat. II
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer YES, you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to SC 6.1 No = Not an interdunal wetland for rating SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat I Cat. II Cat. III Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA



FIGURE 1
COWARDIN CLASSES & 150-FT BUFFER
WETLAND 3

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Palustrine Emergent (PEM)
- Wetland Buffer (150 ft)
- Delineated Wetland Boundary
- Ordinary High Water

0 100 ft

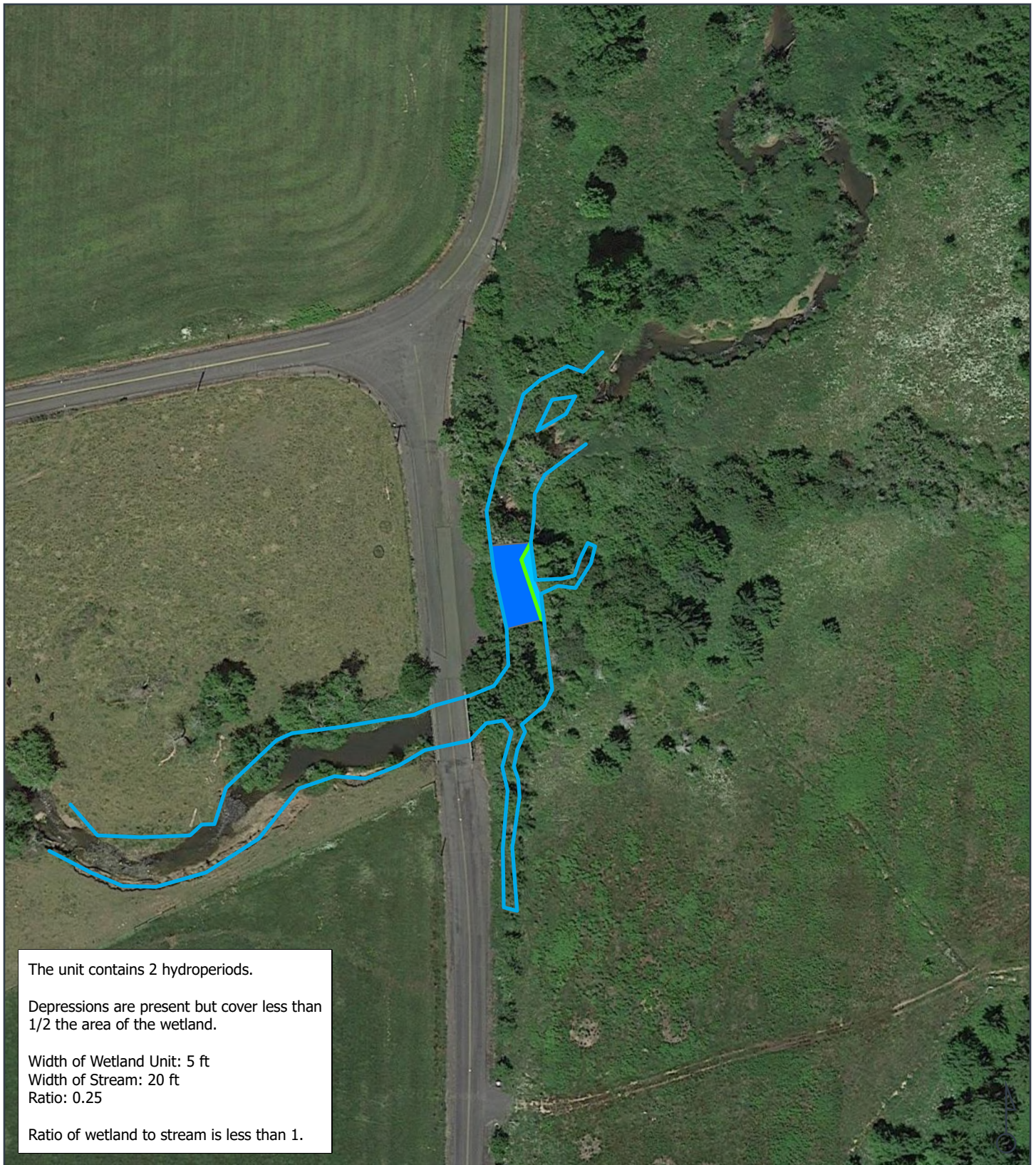


FIGURE 2

HYDROPERIODS

WETLAND 3

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Occasionally Flooded
- Permanent Stream
- Delineated Wetland Boundary
- Ordinary High Water

0 100 ft

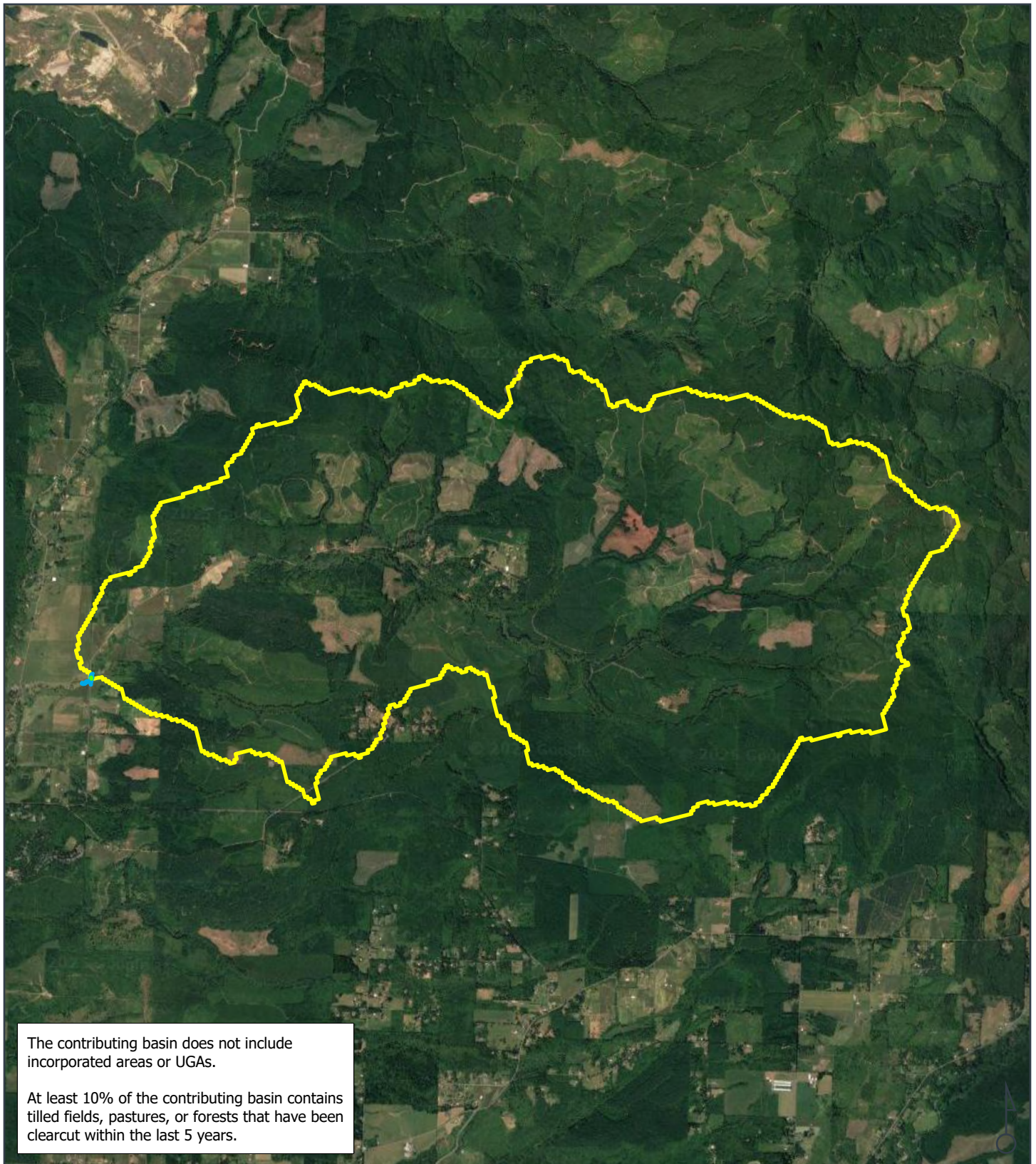


FIGURE 3
CONTRIBUTING BASIN
WETLAND 3
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- ▬ Contributing Basin
- ▬ Delineated Wetland Boundary
- ▬ Ordinary High Water

0 5,000 ft

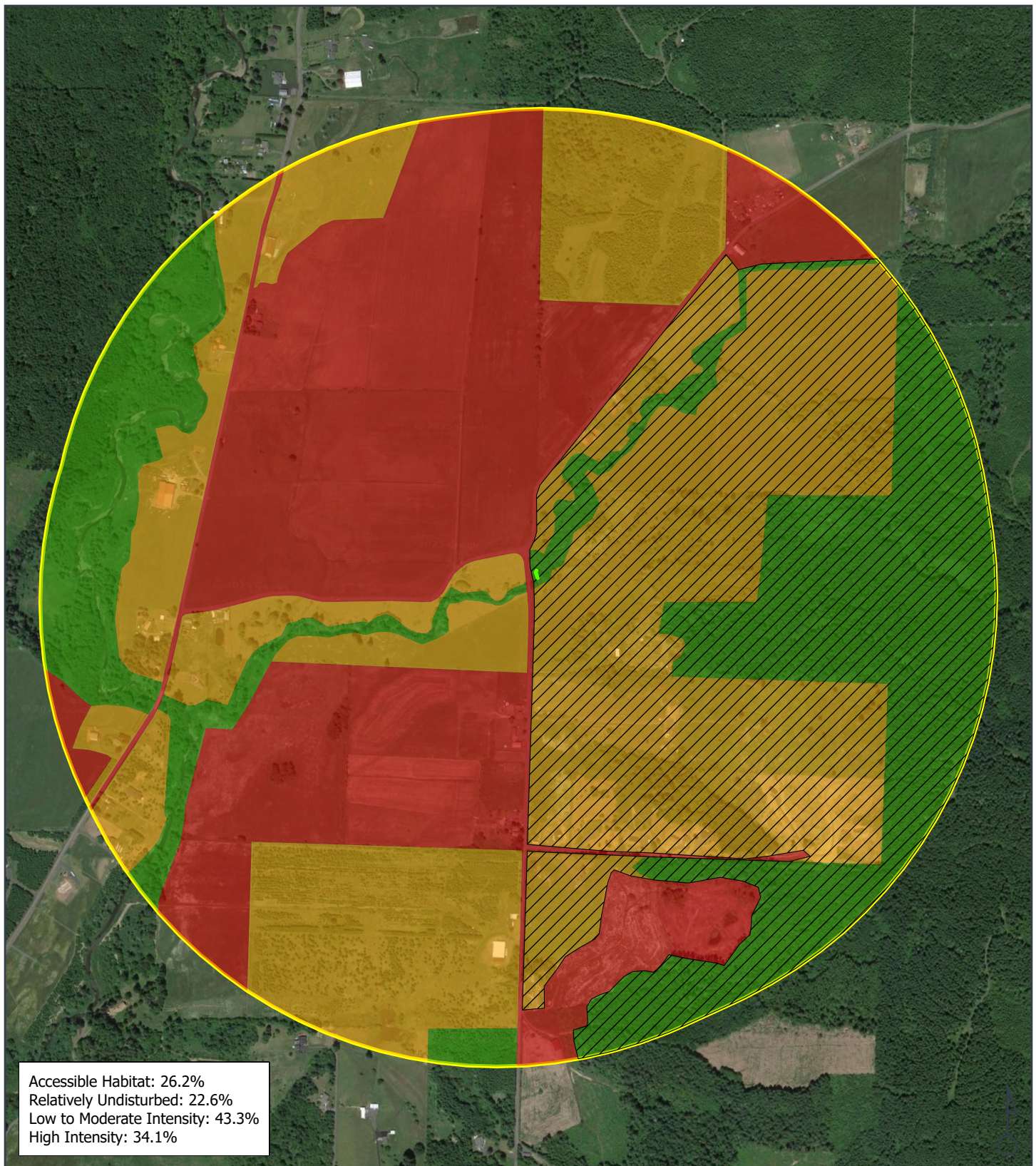


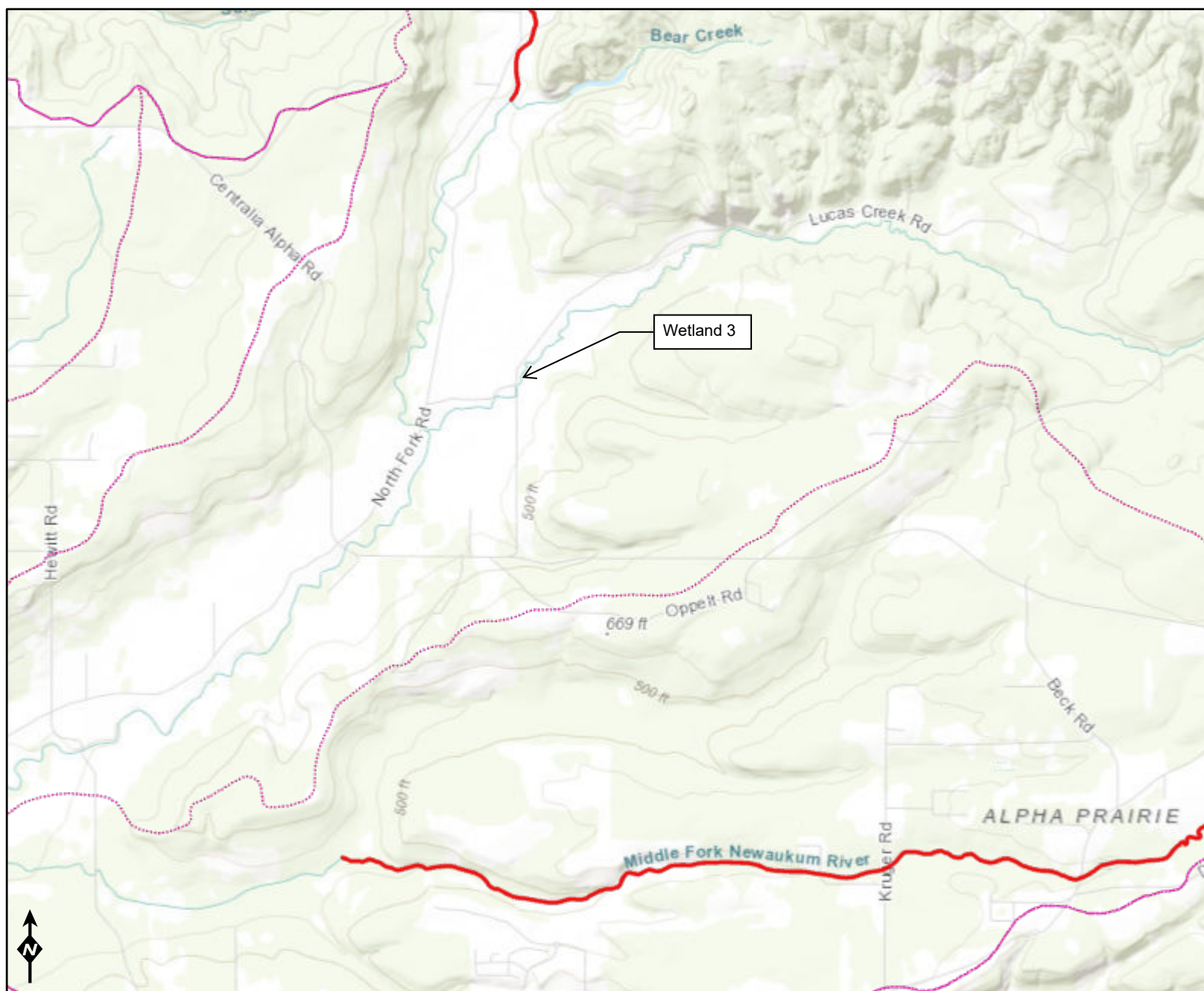
FIGURE 4
LAND USE INTENSITY
WETLAND 3
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

-  Accessible Habitat
-  High Intensity
-  Low to Moderate Intensity
-  Relatively Undisturbed
-  Delineated Wetland Boundary

0 1,000 ft

Figure 5 - 303(d) Listed Waters

**Assessed Water/Sediment****Water**

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

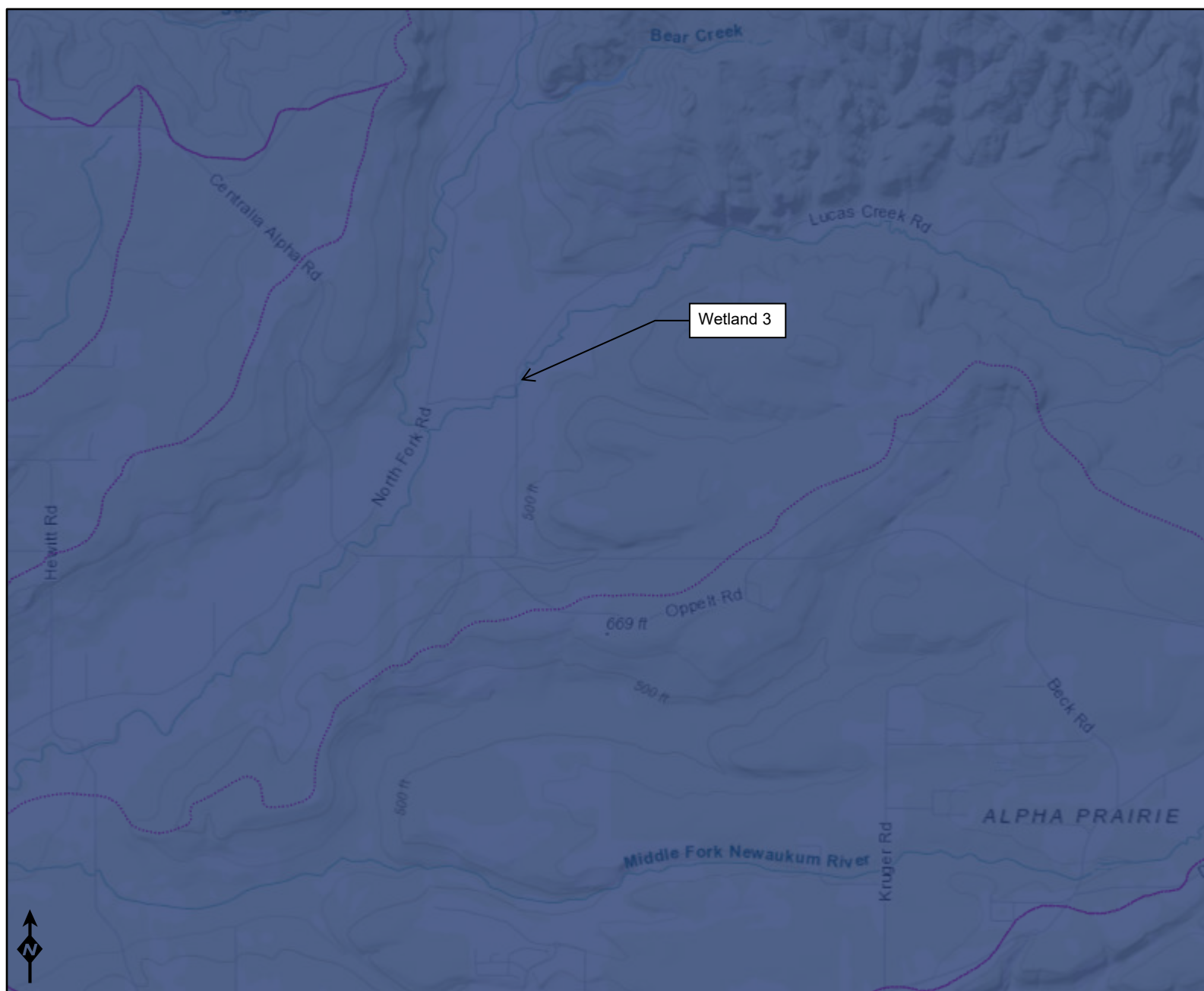
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Figure 6 - TMDLs

**WQ Improvement Projects**

- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Upper Chehalis River Bacteria TMDL

Upper Chehalis River Basin
Temperature TMDL

Upper Chehalis River Basin
Dissolved Oxygen TMDL

Wetland name or number W4

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 4 Date of site visit: 12/3/2024

Rated by K. Corrigan & J. Gray Trained by Ecology? ☒ Yes ☐ No Date of training 2022

HGM Class used for rating Riverine Wetland has multiple HGM classes? ☐ Y ☒ N

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

Source of base aerial photo/map Google

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

1. Category of wetland based on FUNCTIONS

 Category I – Total score = 23 - 27

 Category II – Total score = 20 - 22

☒ Category III – Total score = 16 - 19

 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H ☐ M ☒ L	H ☐ M ☒ L	H ☐ M ☒ L	
Landscape Potential	H ☐ M ☒ L	H ☐ M ☒ L	H ☐ M ☒ L	
Value	☒ H ☐ M ☐ L	H ☐ M ☒ L	☒ H ☐ M ☐ L	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
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	NA

Maps and figures required to answer questions correctly for Western Washington**Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
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 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	2
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	2
Map of the contributing basin	R 2.2, R 2.3, R 5.2	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
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 total 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 unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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 150 ft buffer (<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 total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, 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 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

- ___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
___ At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. 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 sheet flow, or in a swale without distinct banks,
___ The water leaves the wetland **without being impounded**.

NO – go to 5

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 ft deep).

Wetland name or number W4

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

X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
X The overbank flooding occurs at least once every 2 years.

NO – go to 6

YES – The wetland class is **Riverine**

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

6. 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 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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.

Wetland name or number W4

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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 $>3/4$ area of wetland	points = 8	8
Depressions cover $> 1/2$ area of wetland	points = 4	
Depressions present but cover $\leq 1/2$ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with $>90\%$ cover at person height, not Cowardin classes)		
Trees or shrubs $> 2/3$ area of the wetland	points = 8	0
Trees or shrubs $> 1/3$ area of the wetland	points = 6	
Herbaceous plants (> 6 in. high) $> 2/3$ area of the wetland	points = 6	
Herbaceous plants (> 6 in. high) $> 1/3$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland	points = 0	
Total for R 1	Add the points in the boxes above	8

Rating of Site Potential If score is: 12-16 = H X 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	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Other sources _____	Yes = 1 No = 0	0
Total for R 2	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3-6 = H X 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. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
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 in development or in effect 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	2

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

Record the rating on the first page

HUC12: 171001030203 - North Fork Newaukum River

Upper Chehalis River Bacteria TMDL, Upper Chehalis River Basin Temperature TMDL,
& Upper Chehalis River Basin Dissolved Oxygen TMDL

Wetland name or number W4

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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 20 Wetland width = 10 ft points = 9 If the ratio is 10-20 Stream width = 20 ft points = 6 If the ratio is 5-<10 10/20 = 0.5 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 <u>points = 1</u>	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 <u>NOT</u> Cowardin classes). Forest or shrub for >¹/₃ area OR emergent plants > ²/₃ area points = 7 Forest or shrub for > ¹/₁₀ area OR emergent plants > ¹/₃ area points = 4 Plants do not meet above criteria <u>points = 0</u>	0
Total for R 4 Add the points in the boxes above	1

Rating of Site Potential If score is: 12-16 = H 6-11 = M X 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 <u>No = 1</u>	1
R 5.2. Does the upgradient watershed include a UGA or incorporated area? Yes = 1 <u>No = 0</u>	0
R 5.3. Is the upgradient stream or river controlled by dams? Yes = 0 <u>No = 1</u>	1
Total for R 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3 = H X 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 downgradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient <u>points = 1</u> No flooding problems anywhere downstream points = 0	1
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 <u>No = 0</u>	0
Total for R 6 Add the points in the boxes above	1

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

Record the rating on the first page

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

☐ Aquatic bed

4 structures or more: points = 4

☒ Emergent

3 structures: points = 2

☐ Scrub-shrub (areas where shrubs have > 30% cover)

2 structures: points = 1

☐ Forested (areas where trees have > 30% cover)1 structure: points = 0*If the unit has a Forested class, check if:*☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

☐ Permanently flooded or inundated

4 or more types present: points = 3

☒ Seasonally flooded or inundated3 types present: points = 2☐ Occasionally flooded or inundated2 types present: points = 1☐ Saturated only

1 type present: points = 0

☒ Permanently flowing stream or river in, or adjacent to, the wetland☐ Intermittently or seasonally flowing stream in, or adjacent to, the wetland☐ **Lake Fringe wetland****2 points**☐ **Freshwater tidal wetland****2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species

points = 2

5 - 19 species

points = 1

< 5 species

points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



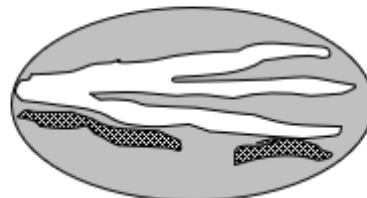
None = 0 points

Low = 1 point

Moderate = 2 points



All three diagrams
in this row
are **High** = 3 points



1

Wetland name or number W4

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. The number of checks is the number of points.

- ☒ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).
- ☐ Standing snags (dbh > 4 in.) within the wetland
- ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)

1

Total for H 1

Add the points in the boxes above

4

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.

- Calculate: % relatively undisturbed habitat 15 + [(% moderate and low intensity land uses)/2] 11.2 = 26.2 %
- Total accessible habitat is:
- > 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

2

H 2.2. Total habitat in 1 km Polygon around the wetland.

- Calculate: % relatively undisturbed habitat 22.6 + [(% moderate and low intensity land uses)/2] 21.7 = 44.3 %
- Total habitat > 50% of Polygon points = 3
 - Total habitat 10-50% and in 1-3 patches points = 2
 - Total habitat 10-50% and > 3 patches points = 1
 - Total habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon:

- > 50% of 1 km Polygon is high intensity land use points = (- 2)
- ≤ 50% of 1 km Polygon is high intensity points = 0

0

Total for H 2

Add the points in the boxes above

3

Rating of Landscape Potential If score is: 4-6 = H X 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 next page)
 - ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
 - ☐ It is mapped as a location for an individual WDFW Priority Species
 - ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data
 - ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan
- Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1
- Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: X 2 = H 1 = M 0 = L

Record the rating on the first page

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **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.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. 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 of the Cascade crest.

¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

Wetland name or number W4

- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- ☒ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☒ **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.
- **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.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are <i>Spartina</i> , see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer ? ¹³⁵ Yes = Category I No – Go to SC 2.2 SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination , ¹³⁶ Go to SC 2.3 No = Not a WHCV SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit 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 3.3 No = Not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Category I bog No – Go to SC 3.4 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 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, 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 4 provide more than 30% of the cover under the canopy? Yes = Category I bog No = Not a bog	Cat. I

¹³⁵ <https://www.dnr.wa.gov/NHPdata>¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? <i>If you answer YES, you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) <u>exceeding 21 in. (53 cm).</u> Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) — The lagoon retains some of its <u>surface water at low tide</u> during spring tides Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/10 ac (4350 ft²) Yes = Category I No = Category II	Cat. I Cat. II
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer YES, you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to SC 6.1 No = Not an interdunal wetland for rating SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat I Cat. II Cat. III Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

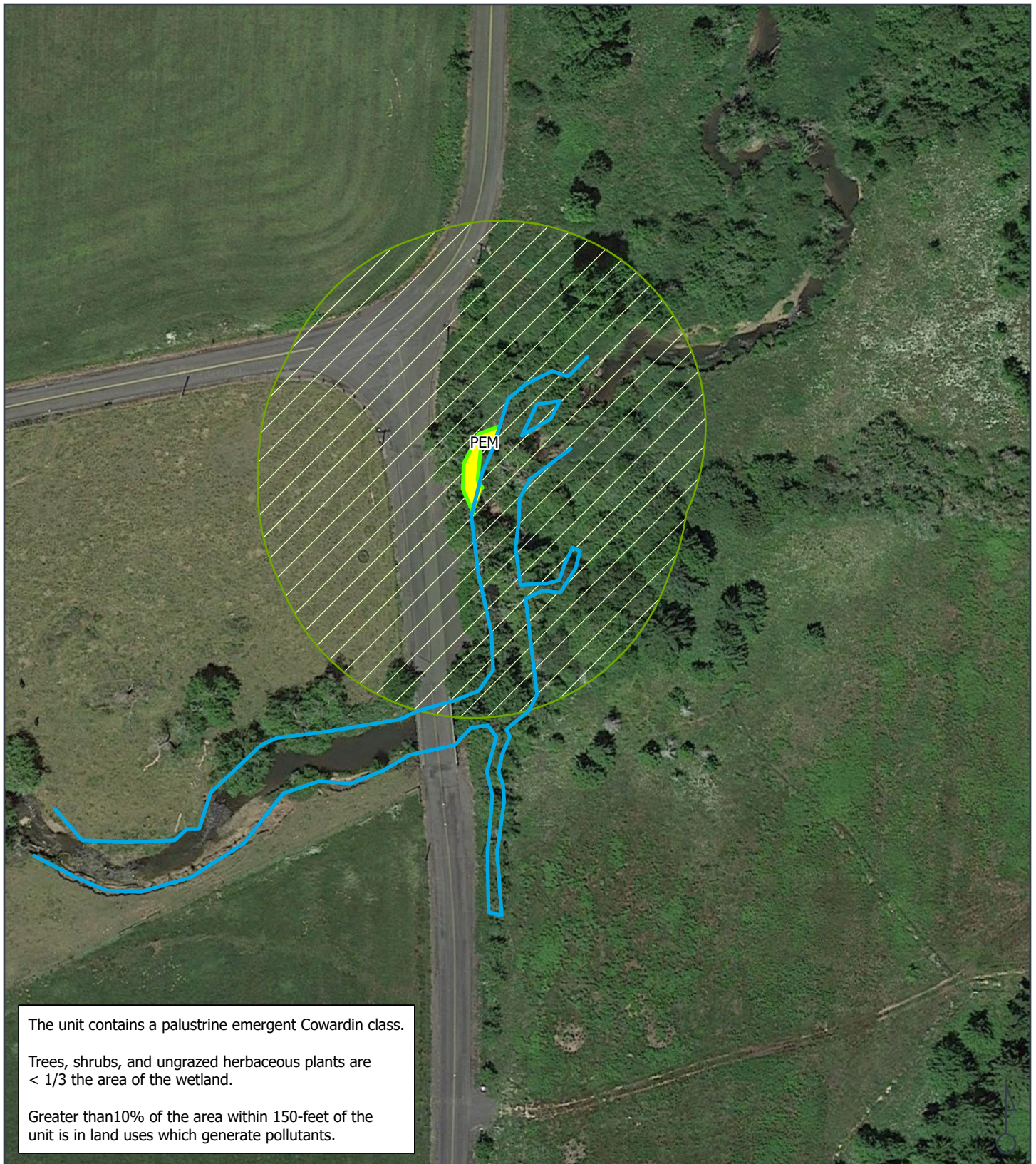


FIGURE 1
COWARDIN CLASSES & 150-FT BUFFER
WETLAND 4
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Palustrine Emergent (PEM)
- Wetland Buffer (150 ft)
- Delineated Wetland Boundary
- Ordinary High Water

0 100 ft



FIGURE 2

HYDROPERIODS

WETLAND 4

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Seasonally Flooded
- Permanent Stream
- Delineated Wetland Boundary
- Ordinary High Water

0 100 ft

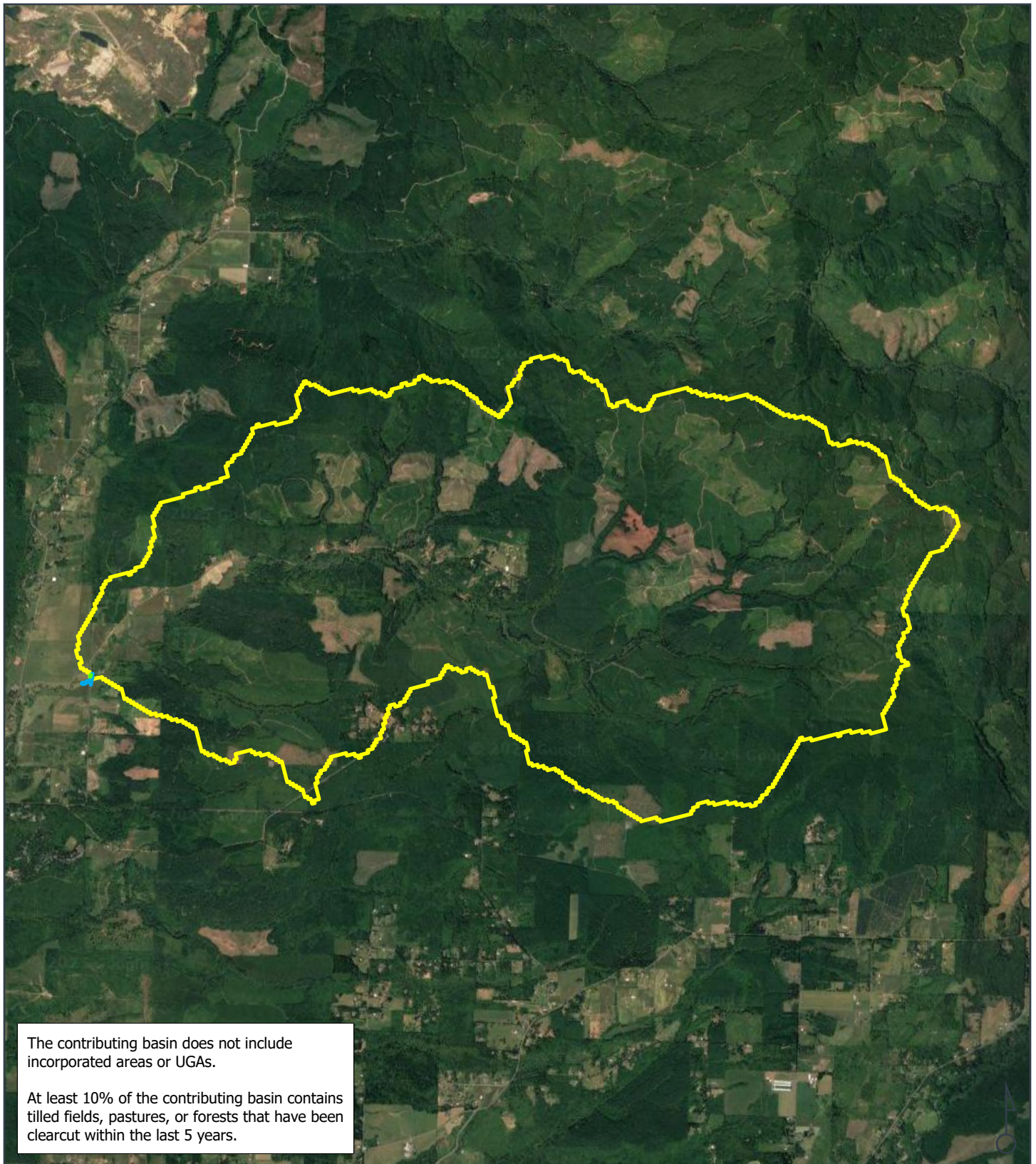


FIGURE 3
CONTRIBUTING BASIN
WETLAND 4
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- ▬ Contributing Basin
- ▬ Delineated Wetland Boundary
- ▬ Ordinary High Water

0 5,000 ft

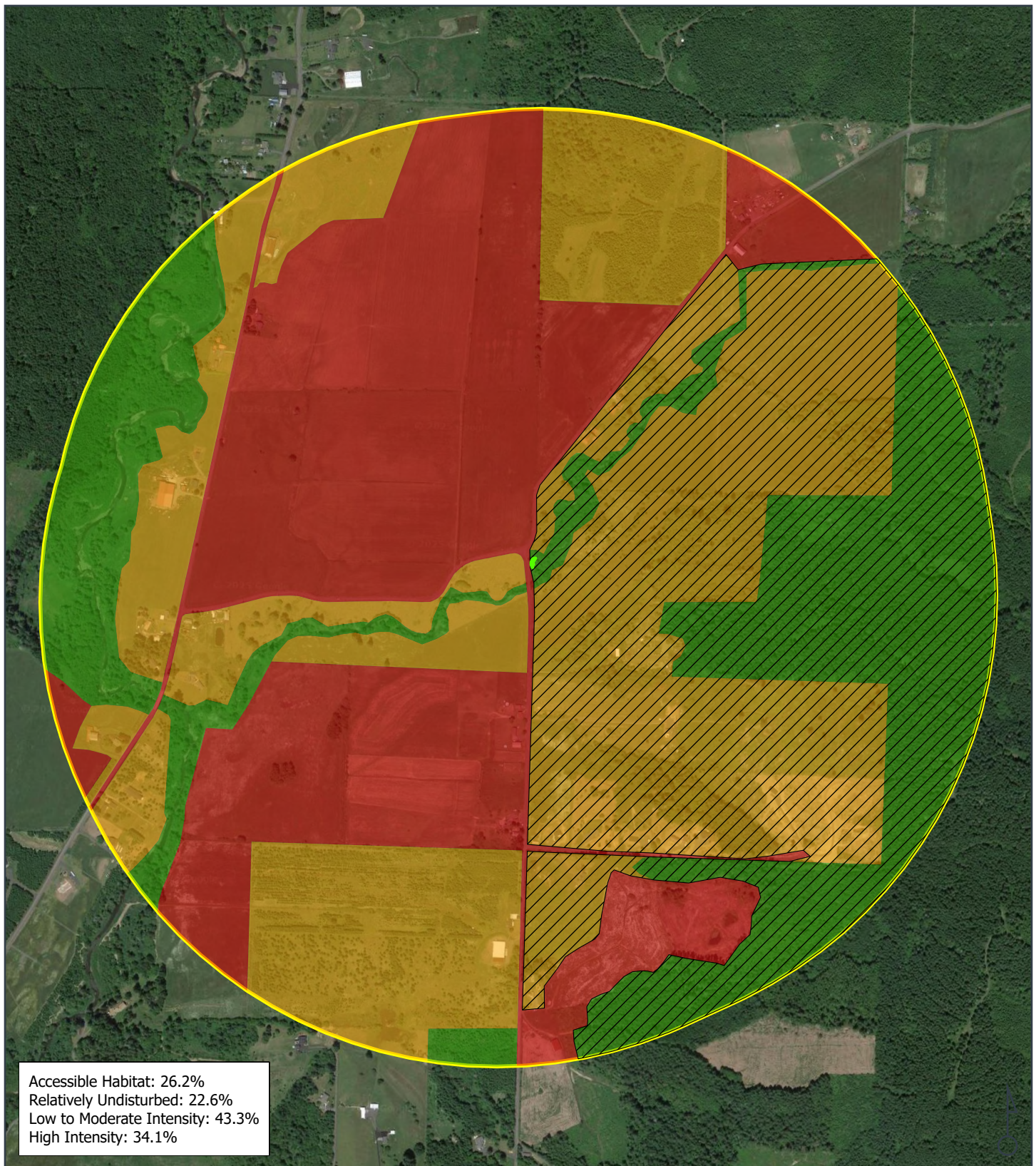


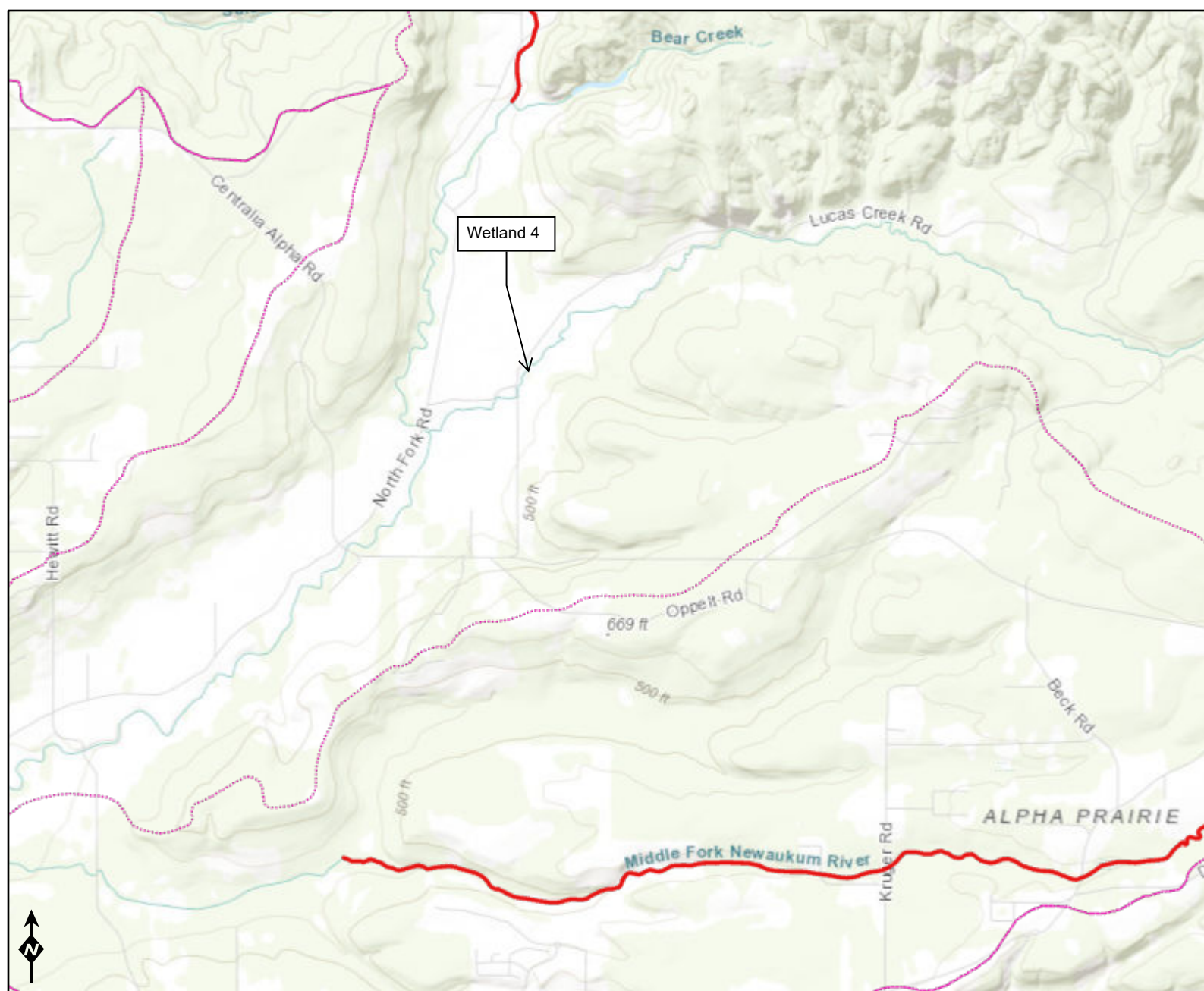
FIGURE 4
LAND USE INTENSITY
WETLAND 4
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

-  Accessible Habitat
-  High Intensity
-  Low to Moderate Intensity
-  Relatively Undisturbed
-  Delineated Wetland Boundary

0 1,000 ft

Figure 5 - 303(d) Listed Waters

**Assessed Water/Sediment****Water**

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

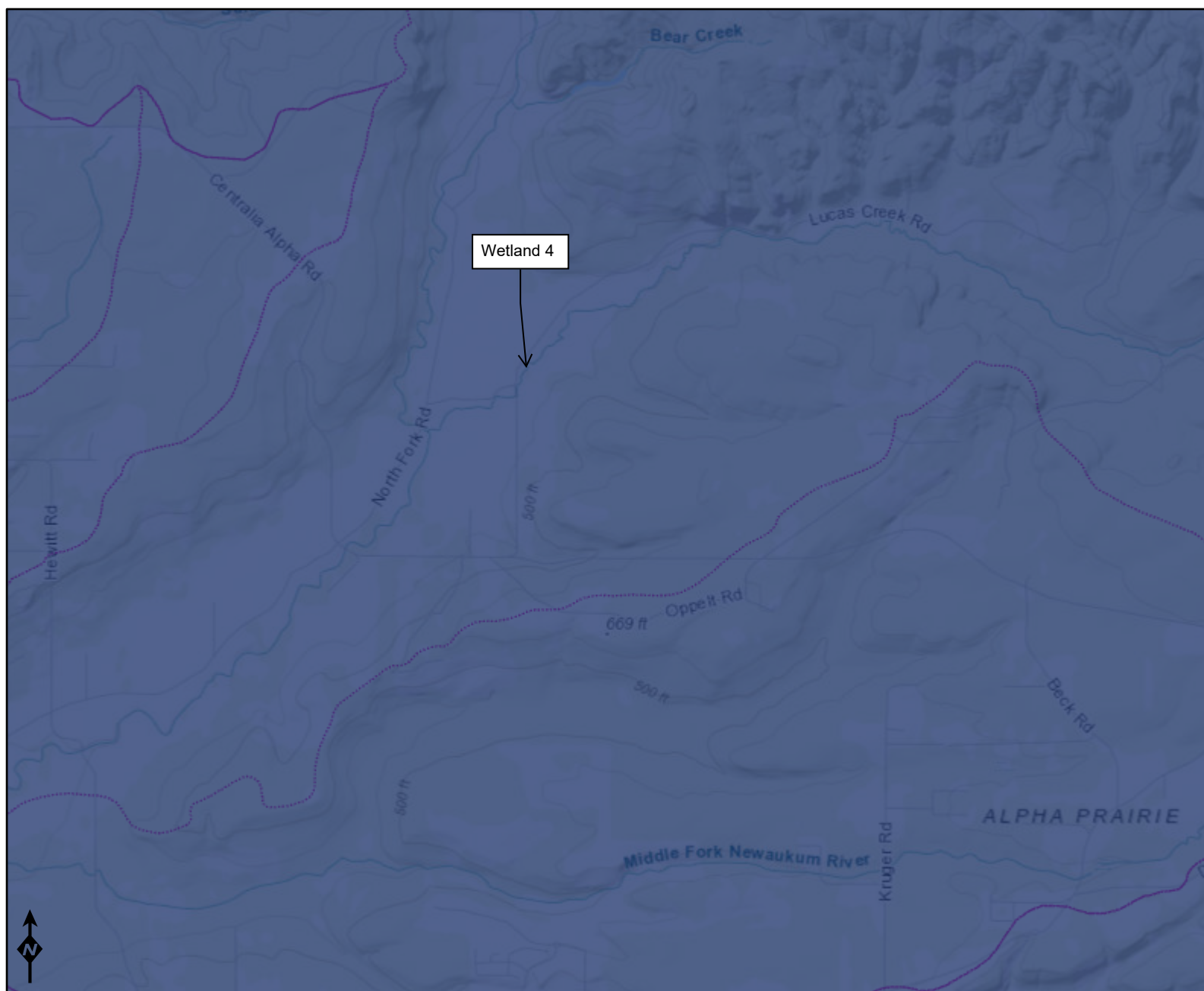
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Figure 6 - TMDLs

**WQ Improvement Projects**

- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Upper Chehalis River Bacteria TMDL

Upper Chehalis River Basin
Temperature TMDL

Upper Chehalis River Basin
Dissolved Oxygen TMDL

Wetland name or number W5

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 5 Date of site visit: 12/3/2024

Rated by K. Corrigan & J. Gray Trained by Ecology? ☒ Yes ☐ No Date of training 2022

HGM Class used for rating Riverine Wetland has multiple HGM classes? ☐ Y ☒ N

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

Source of base aerial photo/map Google

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

1. Category of wetland based on FUNCTIONS

 Category I – Total score = 23 - 27

 Category II – Total score = 20 - 22

☒ Category III – Total score = 16 - 19

 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H <u>M</u> L	H <u>M</u> L	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	<u>H</u> M L	TOTAL
Score Based on Ratings	6	5	6	17

**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
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	NA

Wetland name or number W5

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
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 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	2
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	2
Map of the contributing basin	R 2.2, R 2.3, R 5.2	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
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 total 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 unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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 150 ft buffer (<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 total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, 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 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☐ NO – go to 2

☐ YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ NO – **Saltwater Tidal Fringe (Estuarine)**

☐ YES – **Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☐ NO – go to 3

☐ YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☐ NO – go to 4

☐ YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. 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 sheet flow, or in a swale without distinct banks,
☐ The water leaves the wetland **without being impounded**.

☐ NO – go to 5

☐ 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 ft deep).

Wetland name or number W5

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

X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
X The overbank flooding occurs at least once every 2 years.

NO – go to 6

YES – The wetland class is **Riverine**

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

6. 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 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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.

Wetland name or number W5

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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 $>3/4$ area of wetland	points = 8	
Depressions cover $> 1/2$ area of wetland	points = 4	
Depressions present but cover $\leq 1/2$ area of wetland	points = 2	2
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with $>90\%$ cover at person height, not Cowardin classes)		
Trees or shrubs $> 2/3$ area of the wetland	points = 8	
Trees or shrubs $> 1/3$ area of the wetland	points = 6	
Herbaceous plants (> 6 in. high) $> 2/3$ area of the wetland	points = 6	3
Herbaceous plants (> 6 in. high) $> 1/3$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland	points = 0	
Total for R 1	Add the points in the boxes above	5

Rating of Site Potential If score is: 12-16 = H 6-11 = M X 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	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Other sources _____	Yes = 1 No = 0	0
Total for R 2	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3-6 = H X 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. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
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 in development or in effect 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	2

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

Record the rating on the first page

HUC12: 171001030203 - North Fork Newaukum River

Upper Chehalis River Bacteria TMDL, Upper Chehalis River Basin Temperature TMDL,
& Upper Chehalis River Basin Dissolved Oxygen TMDL

Wetland name or number W5

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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 20 Wetland width = 20 ft points = 9 If the ratio is 10-20 Stream width = 30 ft points = 6 If the ratio is 5-<10 20/30 = 0.66 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = 1		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 <u>NOT</u> Cowardin classes). Forest or shrub for > ¹ / ₃ area OR emergent plants > ² / ₃ area points = 7 Forest or shrub for > ¹ / ₁₀ area OR emergent plants > ¹ / ₃ area points = 4 Plants do not meet above criteria points = 0		4
Total for R 4 Add the points in the boxes above		5

Rating of Site Potential If score is: 12-16 = H 6-11 = M X 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 upgradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	0
R 5.3. Is the upgradient 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 X 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 downgradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0		1
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		1

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

Record the rating on the first page

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

☐ Aquatic bed

4 structures or more: points = 4

☒ Emergent

3 structures: points = 2

☐ Scrub-shrub (areas where shrubs have > 30% cover)

2 structures: points = 1

☐ Forested (areas where trees have > 30% cover)1 structure: points = 0*If the unit has a Forested class, check if:*☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

☐ Permanently flooded or inundated

4 or more types present: points = 3

☐ Seasonally flooded or inundated3 types present: points = 2☒ Occasionally flooded or inundated2 types present: points = 1☐ Saturated only

1 type present: points = 0

☒ Permanently flowing stream or river in, or adjacent to, the wetland☐ Intermittently or seasonally flowing stream in, or adjacent to, the wetland☐ **Lake Fringe wetland****2 points**☐ **Freshwater tidal wetland****2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species

points = 2

5 - 19 species

points = 1

< 5 species

points = 0

0

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plant classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



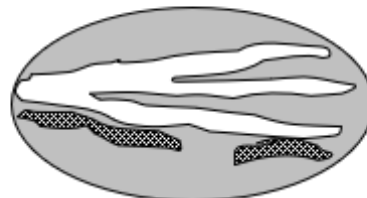
None = 0 points

Low = 1 point

Moderate = 2 points



All three diagrams
in this row
are **High** = 3 points



1

Wetland name or number W5

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. The number of checks is the number of points.

- ☐ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).
- ☐ Standing snags (dbh > 4 in.) within the wetland
- ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- ☒ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)

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 X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.

Calculate: % relatively undisturbed habitat 1.6 + [(% moderate and low intensity land uses)/2] 2.2 = 3.8 %

Total accessible habitat is:

> 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

0

H 2.2. Total habitat in 1 km Polygon around the wetland.

Calculate: % relatively undisturbed habitat 22.6 + [(% moderate and low intensity land uses)/2] 21.7 = 44.3 %

Total habitat > 50% of Polygon

points = 3

Total habitat 10-50% and in 1-3 patches

points = 2

Total habitat 10-50% and > 3 patches

points = 1

Total habitat < 10% of 1 km Polygon

points = 0

1

H 2.3. Land use intensity in 1 km Polygon:

> 50% of 1 km Polygon is high intensity land use

points = (- 2)

≤ 50% of 1 km Polygon is high intensity

points = 0

0

Total for H 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 4-6 = H X 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 next page)

☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)

☐ It is mapped as a location for an individual WDFW Priority Species

☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data

☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

Site has 1 or 2 Priority Habitats (listed on next page) within 100 m

points = 1

Site does not meet any of the criteria above

points = 0

2

Rating of Value If score is: X 2 = H 1 = M 0 = L

Record the rating on the first page

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **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.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. 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 of the Cascade crest.

¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

Wetland name or number W5

- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- ☒ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☒ **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.
- **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.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are <i>Spartina</i> , see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer ? ¹³⁵ Yes = Category I No – Go to SC 2.2 SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination , ¹³⁶ Go to SC 2.3 No = Not a WHCV SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit 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 3.3 No = Not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Category I bog No – Go to SC 3.4 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 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, 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 4 provide more than 30% of the cover under the canopy? Yes = Category I bog No = Not a bog	Cat. I

¹³⁵ <https://www.dnr.wa.gov/NHPdata>¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? <i>If you answer YES, you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) <u>exceeding 21 in. (53 cm).</u> Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) — The lagoon retains some of its <u>surface water at low tide</u> during spring tides Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/10 ac (4350 ft²) Yes = Category I No = Category II	Cat. I Cat. II
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer YES, you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to SC 6.1 No = Not an interdunal wetland for rating SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat I Cat. II Cat. III Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

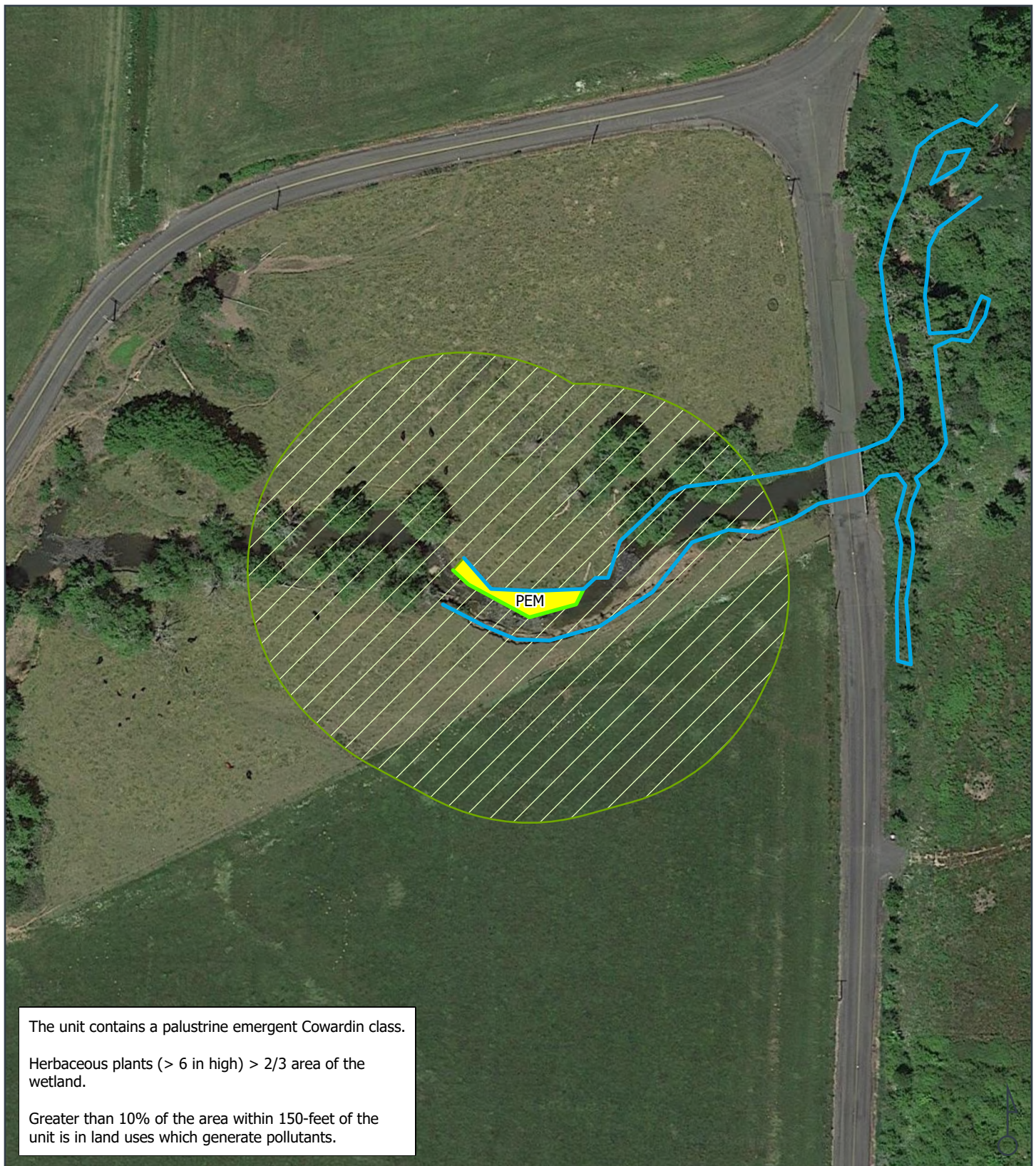


FIGURE 1
COWARDIN CLASSES & 150-FT BUFFER
WETLAND 5

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Palustrine Emergent (PEM)
- Wetland Buffer (150 ft)
- Delineated Wetland Boundary
- Ordinary High Water

0

ft

 100

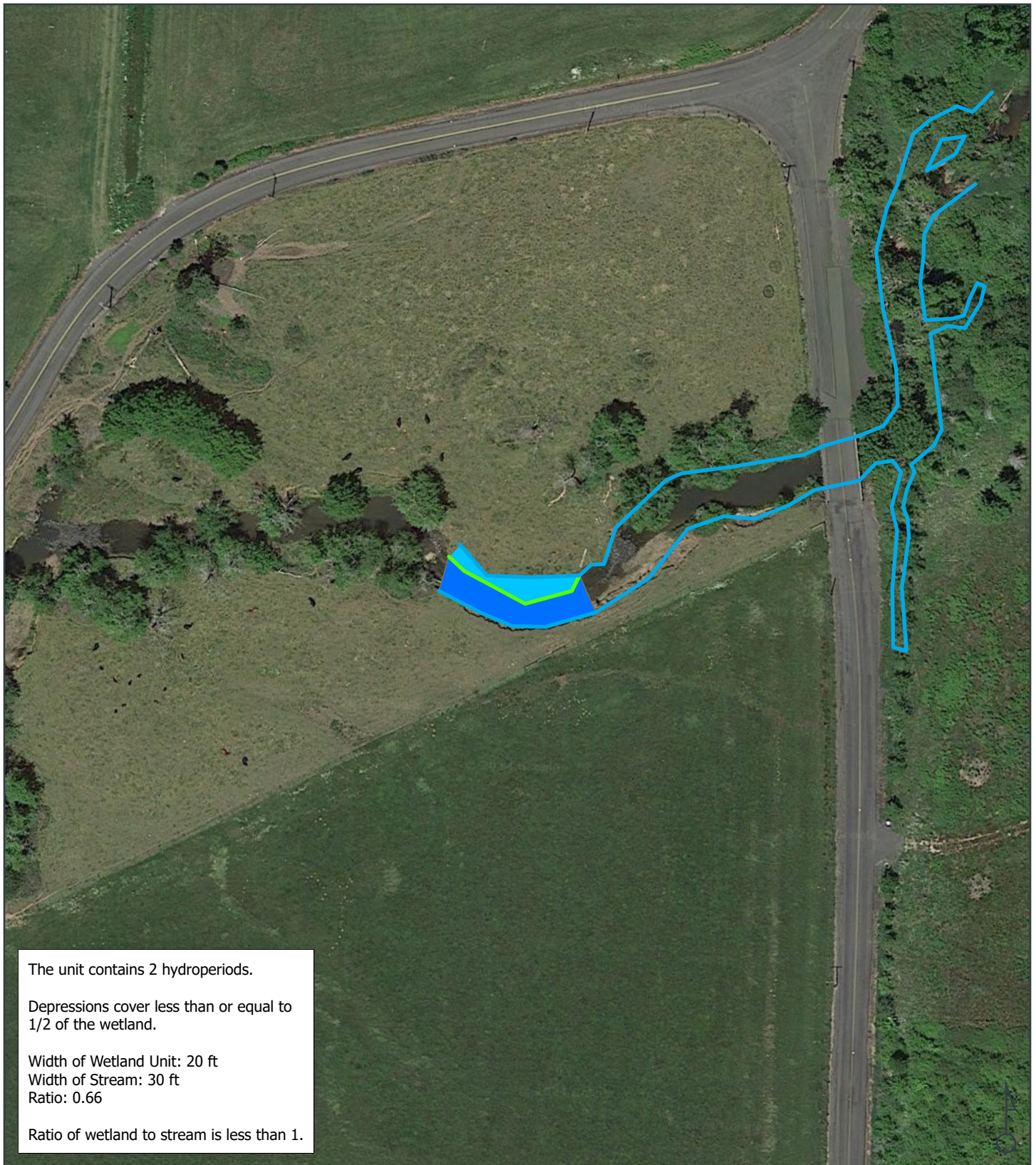


FIGURE 2

HYDROPERIODS

WETLAND 5

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Occasionally Flooded
- Permanent Stream
- Delineated Wetland Boundary
- Ordinary High Water

0 100 ft

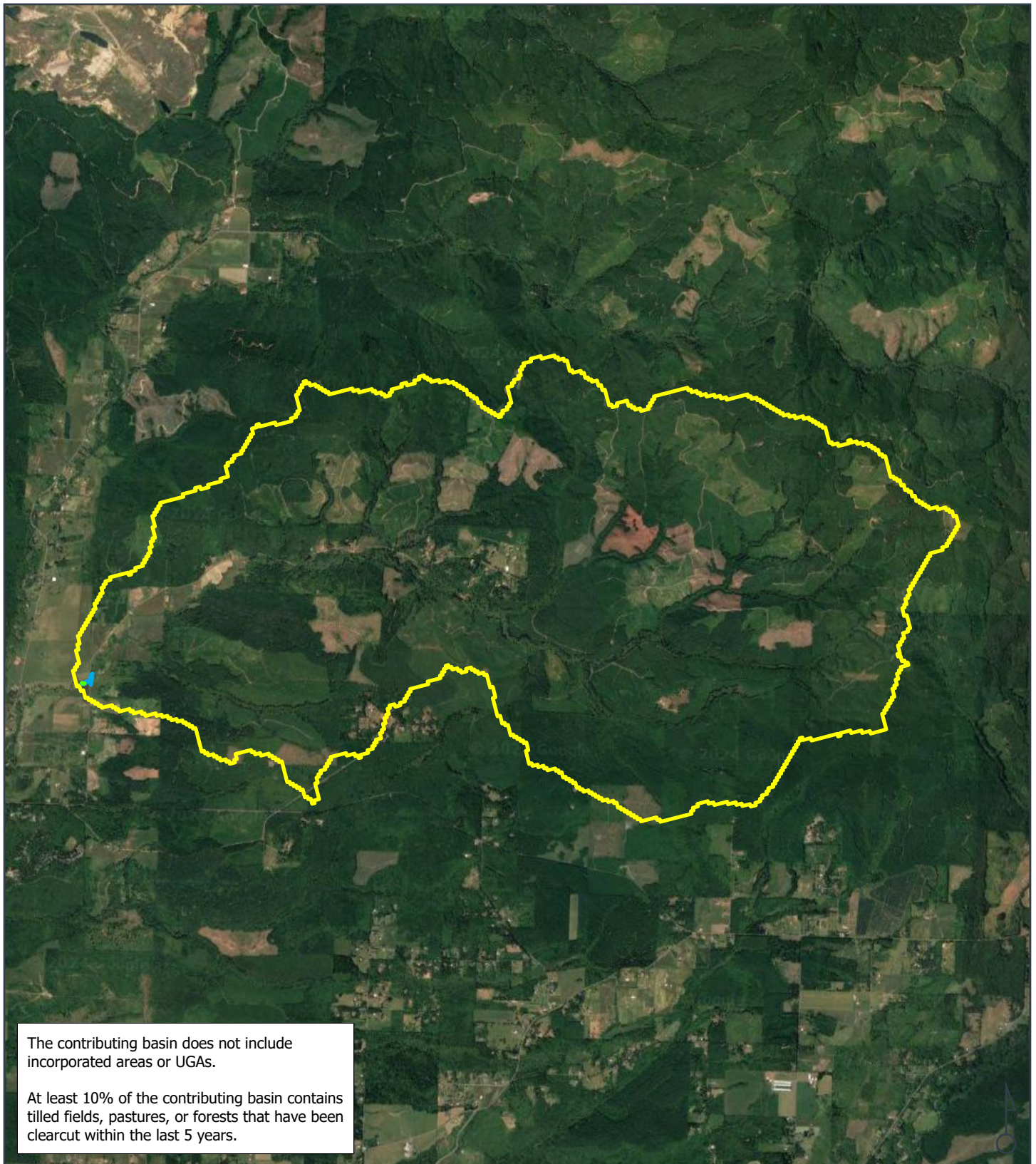


FIGURE 3
CONTRIBUTING BASIN
WETLAND 5
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- ▬ Contributing Basin
- ▬ Delineated Wetland Boundary
- ▬ Ordinary High Water

0 5,000 ft

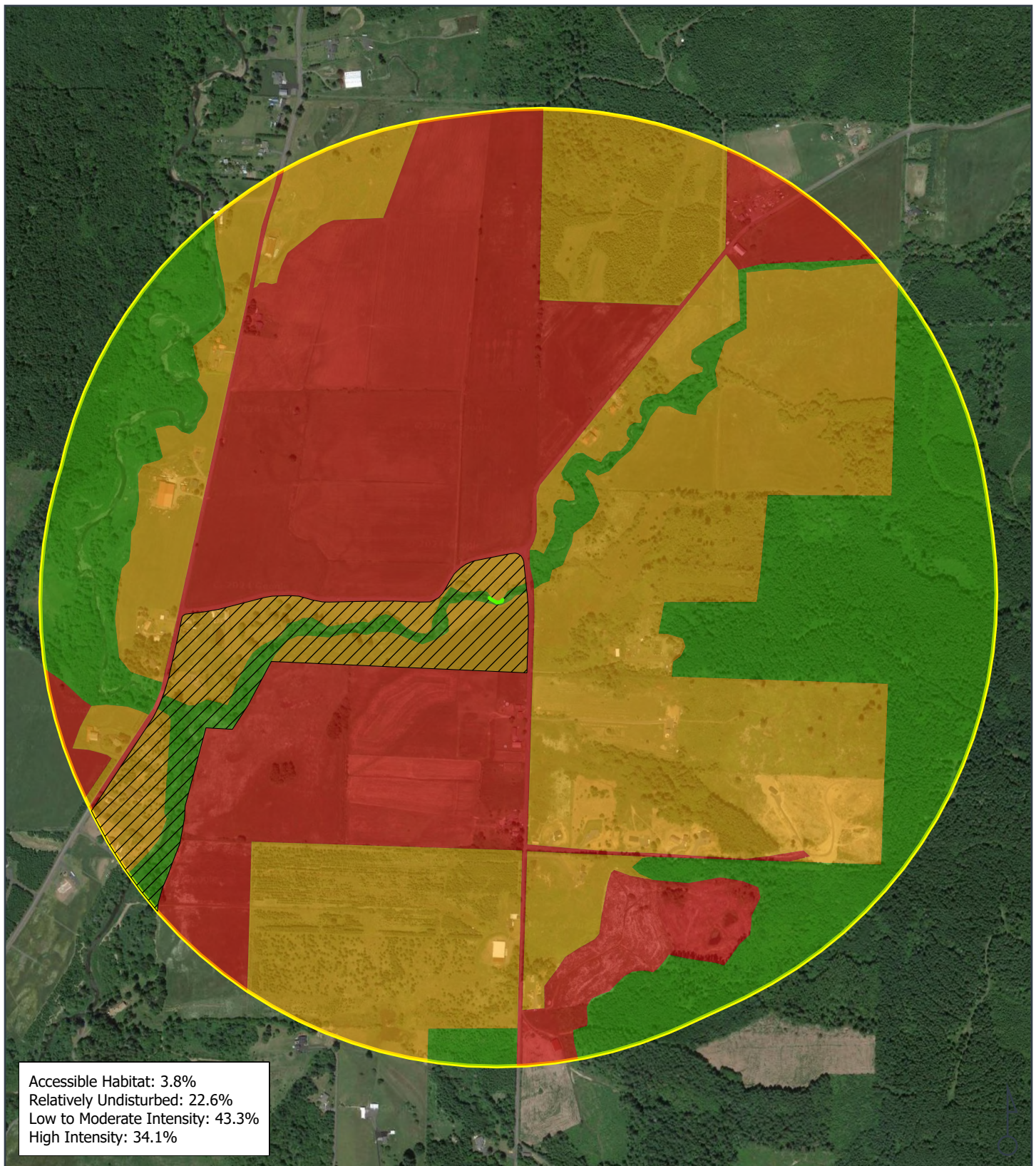


FIGURE 4
LAND USE INTENSITY
WETLAND 5
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Accessible Habitat
- High Intensity
- Low to Moderate Intensity
- Relatively Undisturbed
- Delineated Wetland Boundary

0 1,000 ft

Figure 5 - 303(d) Listed Waters

**Assessed Water/Sediment****Water**

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

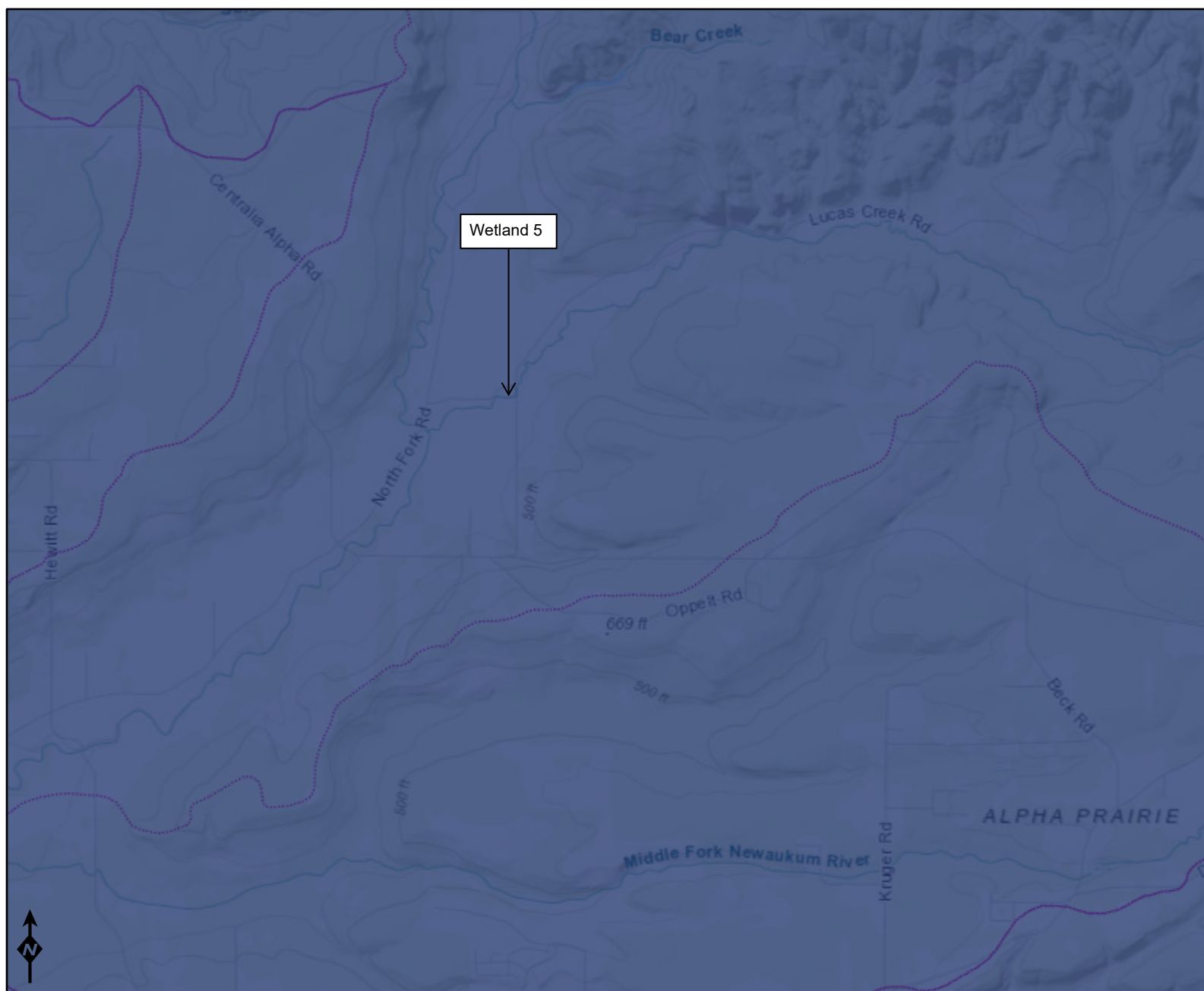
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Figure 6 - TMDLs

**WQ Improvement Projects**

- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Upper Chehalis River Bacteria TMDL

Upper Chehalis River Basin
Temperature TMDL

Upper Chehalis River Basin
Dissolved Oxygen TMDL

Wetland name or number W6

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 6 Date of site visit: 12/3/2024
 Rated by K. Corrigan & J. Gray Trained by Ecology? ☒ Yes ☐ No Date of training 2022
 HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Y ☒ N

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

Source of base aerial photo/map Google

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

1. Category of wetland based on FUNCTIONS

 Category I – Total score = 23 - 27
 Category II – Total score = 20 - 22
 X Category III – Total score = 16 - 19
 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>(L)</u>	H <u>(M)</u> L	H M <u>(L)</u>	
Landscape Potential	H <u>(M)</u> L	H M <u>(L)</u>	H <u>(M)</u> L	
Value	<u>(H)</u> M L	H <u>(M)</u> L	<u>(H)</u> M L	TOTAL
Score Based on Ratings	6	5	6	17

**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
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	NA

Wetland name or number W6

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total 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 unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
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 total 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 unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
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 150 ft buffer (<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 total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, 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 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___ At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. 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 sheet flow, or in a swale without distinct banks,

___ The water leaves the wetland **without being impounded**.

NO – go to 5

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 ft deep).

Wetland name or number W6

5. 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 2 years.

NO – go to 6

YES – The wetland class is **Riverine**

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

6. 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 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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.

Wetland name or number W6

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. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		3
D 1.2. <u>The soil 2 in. below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 <u>No = 0</u>		0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > 1/2 of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0		0
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is ≥ 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0		0
Total for D 1		3

Rating of Site Potential If score is: 12-16 = H 6-11 = M X 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 = 1 <u>No = 0</u>	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<u>Yes = 1</u> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 <u>No = 0</u>	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 <u>No = 0</u>	0
Total for D 2		1

Rating of Landscape Potential If score is: 3 or 4 = H X 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, lake, or marine water that is on the 303(d) list?	Yes = 1 <u>No = 0</u>	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 <u>No = 0</u>	0
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 in development or in effect for the basin in which the unit is found.)	<u>Yes = 2</u> No = 0	2
Total for D 3		2

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

HUC12: 171001030203 - North Fork Newaukum River

Upper Chehalis River Bacteria TMDL, Upper Chehalis River Basin Temperature TMDL,
& Upper Chehalis River Basin Dissolved Oxygen TMDL

Wetland name or number W6

DEPRESSIONAL AND FLATS 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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. <u>Depth of storage during wet periods:</u> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. <u>Contribution of the wetland to storage in the watershed:</u> Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.		
The area of the basin is less than 10 times the area of the unit	points = 5	3
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	10

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

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

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 <u>No = 0</u>	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 <u>No = 0</u>	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 <u>No = 0</u>	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 X 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 <u>the unit in a landscape that has flooding problems</u> ? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met.</u>		
The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately downgradient of unit.	points = 2	1
• Surface flooding problems are in a sub-basin farther downgradient.	points = 1	
• Flooding from groundwater is an issue in the sub-basin.	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. <i>Explain why</i> _____	points = 0	
• 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 in a regional flood control plan?		
Yes = 2 <u>No = 0</u>		0
Total for D 6	Add the points in the boxes above	1

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

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

☐ Aquatic bed

4 structures or more: points = 4

☒ Emergent

3 structures: points = 2

☐ Scrub-shrub (areas where shrubs have > 30% cover)

2 structures: points = 1

☐ Forested (areas where trees have > 30% cover)1 structure: points = 0*If the unit has a Forested class, check if:*☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

☐ Permanently flooded or inundated

4 or more types present: points = 3

☐ Seasonally flooded or inundated

3 types present: points = 2

☒ Occasionally flooded or inundated

2 types present: points = 1

☐ Saturated only1 type present: points = 0☐ Permanently flowing stream or river in, or adjacent to, the wetland☐ Intermittently or seasonally flowing stream in, or adjacent to, the wetland☐ **Lake Fringe wetland****2 points**☐ **Freshwater tidal wetland****2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species

points = 2

5 - 19 species

points = 1

< 5 species

points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.

None = 0 points

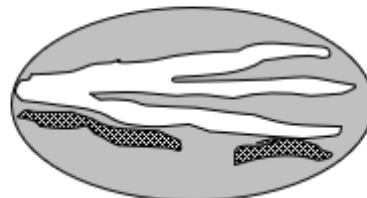
Low = 1 point



Moderate = 2 points



All three diagrams
in this row
are **High** = 3 points



0

Wetland name or number W6

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. The number of checks is the number of points.

- ☐ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).
- ☐ Standing snags (dbh > 4 in.) within the wetland
- ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- ☒ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)

1

Total for H 1

Add the points in the boxes above

2

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.

- Calculate: % relatively undisturbed habitat $\frac{1.6}{2} + [(\% \text{ moderate and low intensity land uses})/2] = \frac{2.2}{2} = 3.8\%$
- Total accessible habitat is:
- > 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

0

H 2.2. Total habitat in 1 km Polygon around the wetland.

- Calculate: % relatively undisturbed habitat $\frac{22.6}{2} + [(\% \text{ moderate and low intensity land uses})/2] = \frac{21.7}{2} = 44.3\%$
- Total habitat > 50% of Polygon points = 3
 - Total habitat 10-50% and in 1-3 patches points = 2
 - Total habitat 10-50% and > 3 patches points = 1
 - Total habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon:

- > 50% of 1 km Polygon is high intensity land use points = (-2)
- ≤ 50% of 1 km Polygon is high intensity points = 0

0

Total for H 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 4-6 = H X 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 next page)
 - ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
 - ☐ It is mapped as a location for an individual WDFW Priority Species
 - ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data
 - ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan
- Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1
- Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: X 2 = H 1 = M 0 = L

Record the rating on the first page

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **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.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. 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 of the Cascade crest.

¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

Wetland name or number W6

- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- X **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- X **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.
- **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.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are <i>Spartina</i> , see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer ? ¹³⁵ Yes = Category I No – Go to SC 2.2 SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,¹³⁶ Go to SC 2.3 No = Not a WHCV SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit 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 3.3 No = Not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Category I bog No – Go to SC 3.4 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 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, 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 4 provide more than 30% of the cover under the canopy? Yes = Category I bog No = Not a bog	Cat. I

¹³⁵ <https://www.dnr.wa.gov/NHPdata>¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf



FIGURE 1
COWARDIN CLASSES & 150-FT BUFFER
WETLAND 6

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Palustrine Emergent (PEM)
- Wetland Buffer (150 ft)
- Delineated Wetland Boundary
- Estimated Wetland Boundary
- Ordinary High Water

0 100 ft



FIGURE 2

HYDROPERIODS

WETLAND 6

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Occasionally Flooded
- Delineated Wetland Boundary
- Estimated Wetland Boundary

0 100 ft

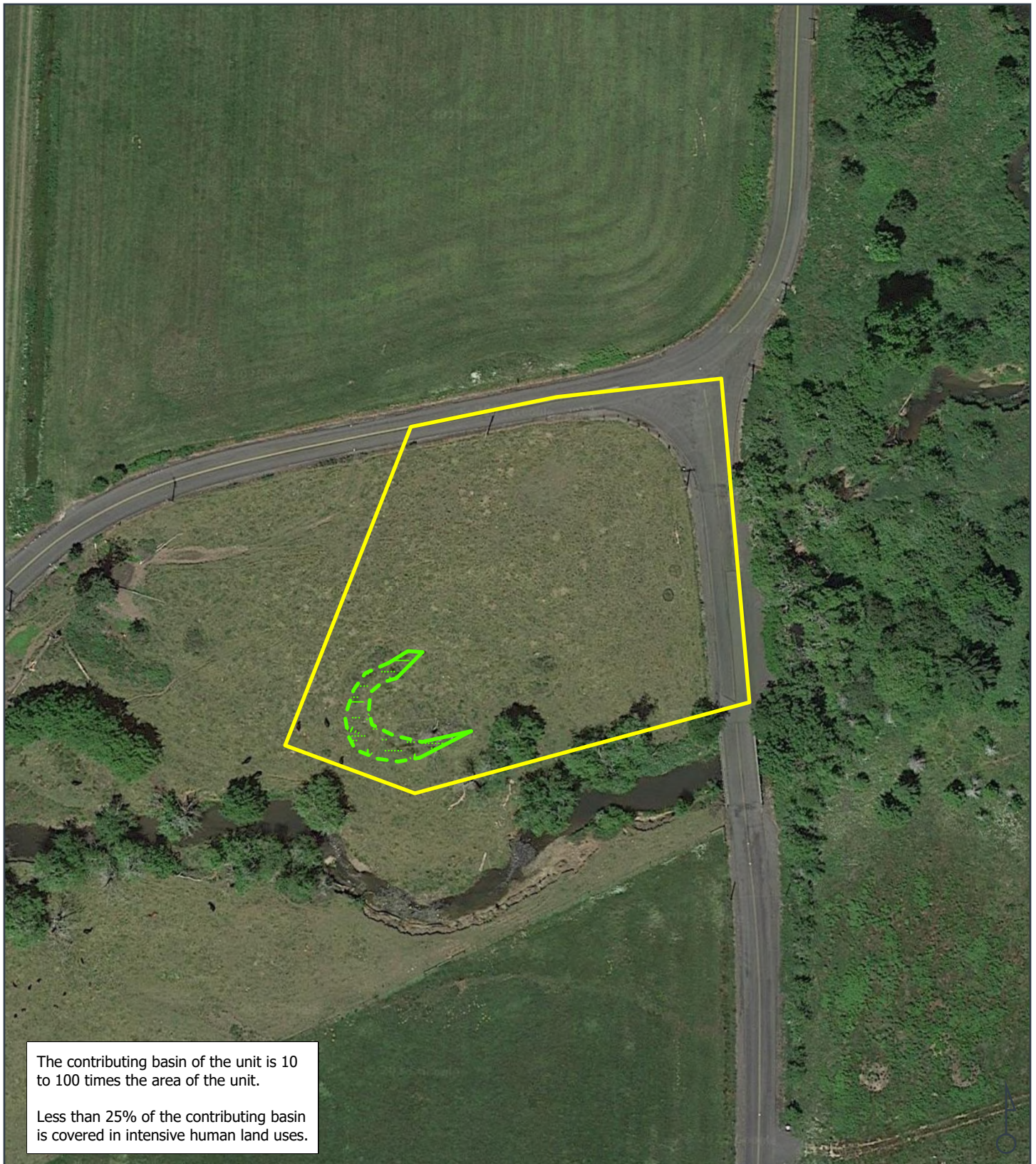


FIGURE 3
CONTRIBUTING BASIN
WETLAND 6
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- ▮ Contributing Basin
- ▮ Delineated Wetland Boundary
- - - Estimated Wetland Boundary
- ▮ Wetland Area

0 100 ft

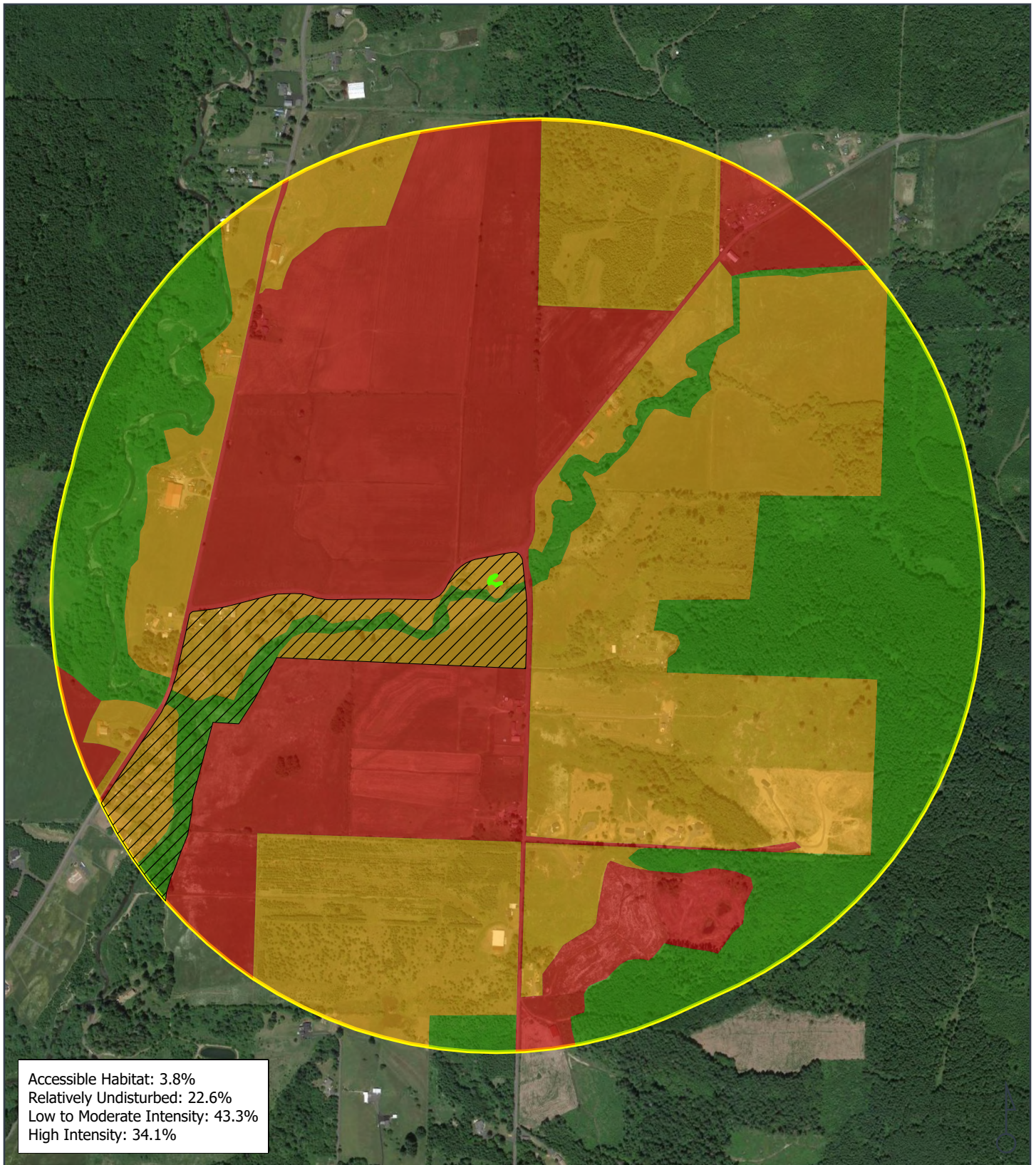


FIGURE 4
LAND USE INTENSITY
WETLAND 6
SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

LEGEND

- Accessible Habitat
- High Intensity
- Low to Moderate Intensity
- Relatively Undisturbed
- Delineated Wetland Boundary
- Estimated Wetland Boundary

0 1,000 ft

Figure 5 - 303(d) Listed Waters

**Assessed Water/Sediment****Water**

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

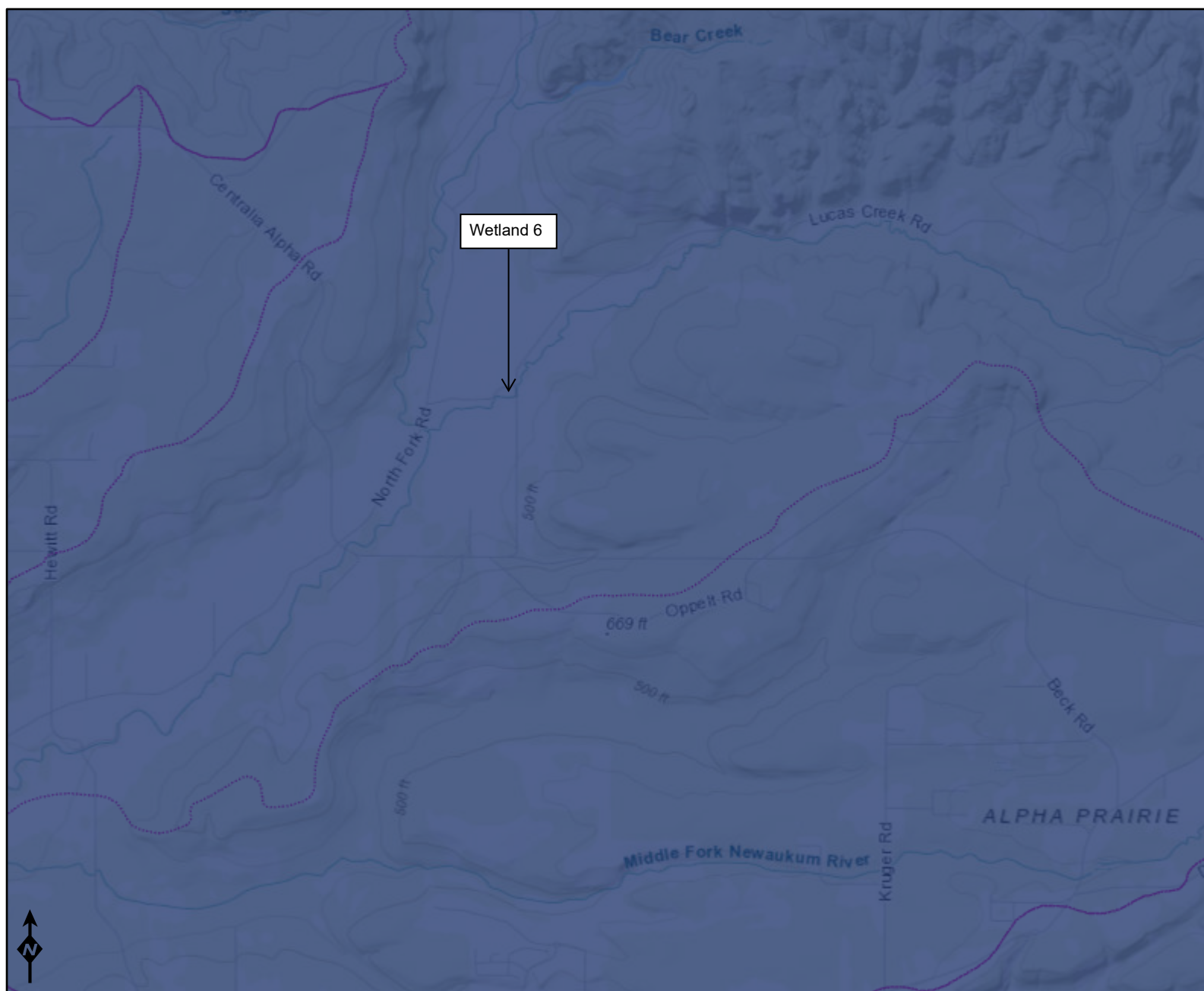
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Figure 6 - TMDLs

**WQ Improvement Projects**

- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Subbasins (12 digit HUCs)

- HUC boundary

HUC12: 171001030203 -
North Fork Newaukum River

Upper Chehalis River Bacteria TMDL

Upper Chehalis River Basin
Temperature TMDL

Upper Chehalis River Basin
Dissolved Oxygen TMDL

Appendix E: Site Photos

Site Photographs – December 3 & 4, 2024



1. Wetland 1 from its northern boundary, looking south.



2. Typical conditions in Wetland 2, looking east towards Senn Road



3. Wetland 3 and Lucas Creek, looking north along the east bank of Lucas Creek



4. Typical conditions in Wetland 4, looking west toward Senn Road



5. Typical conditions in Wetland 5, looking east along north bank Lucas Creek



6. Typical conditions in Wetland 6, looking northwest



7. Lucas Creek from Senn Road looking west



8. Lucas Creek from Senn Road looking northeast



9. Senn Road bridge over Lucas Creek



10. Typical erosion along south bank of Lucas Creek west of Senn Road.



11. Lucas Creek east of Senn Road



12. Confluence of Tributary 1 and Lucas Creek



13. Typical conditions in Tributary 1, looking north



14. Tributary 2, looking east from Lucas Creek