

**Wetland Assessment and Wetland Mitigation Plan
Westridge Addition
City of Spokane, Washington**

August 10, 2022

Prepared for

WCE, Inc.

Prepared by:



Towey Ecological Services

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Introduction

This assessment was authorized to properly categorize wetlands and their buffers pursuant to the *Spokane Municipal Code Title 17E (Code)*. The assessment was performed to provide guidance for the proper design layout for a proposed development. The assessment was performed within parcels 25263.0051, 25263.3103, 25263.3003, 25263.3002, 25263.2907 and 25263.2906. The Code provided guidance on wetland protection (Chapter 17E.070) and wetland mitigation (Section 17E.070.130). A mitigation plan, herein, provides recommendations for the proposed project disturbances to the wetland and wetland buffer.

The investigation was conducted on June 15, 2022. The primary investigator was William T. Towey, a Qualified Wetland Specialist.

Methods

Wetland areas were assessed using criteria and guidance specified in the *Code*, the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACOE 1987), the National Wetland Inventory Map (attachment 1), the Natural Resources Conservation Service aerial soil surveys (attachment 2) and the *2014 Eastern Washington Wetland Rating and USACOE Arid West Forms* (attachment 3) and Site Plans (attachment 4).

Wetlands identified within the project area were categorized and vegetative communities and general hydrology noted. Pink flagging was used to designate the outer extent of the wetland buffer areas and the soil pits for each wetland. The flagged points were surveyed and transferred to a base site plan to guide layout and mitigation recommendations.

Results and Discussion

The assessment identified three depressional wetlands within the proposed project area. A summary of information (including the designation, category and buffer) of the wetlands is provided in Table 1.

<u>Designation.</u>	<u>Category</u>	<u>Required Buffer</u>
Wetland (Depressional) A	Category 3	150' (high impact)
Wetland (Depressional) B	Category 3	150' (high impact)
Wetland (Depressional) C	Category 3	150' (high impact)

Table 1- Summary of Identified Wetlands

Wetland Assessment

Wetland A- A Category III Depressional Wetland was identified. The wetland is identified on the National Wetland Inventory Map as a PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded). The wetland scored a total of 16 points (7 points Improving Water Quality, 4 points Hydrologic and 5 points Habitat), utilizing the 2014 Eastern Washington Wetland Rating System.

Wetland Vegetation- The wetland is characterized by reed canarygrass (*Phalaris arundinacea*), equisetum (*Equisetum hyemale*), and goldenrod (*Solidago* spp.).

Upland Vegetation- The dominant species consists of mullein (*Verbascum thapsus*), wild rose (*Rosa* spp.), upland grasses, hounds-tongue (*Cynoglossum officinale*), yarrow (*Achillea millefolium*), thistle (*Cirsium arvense*), and goldenrod.

Soils- Cocolalla-Hardesty complex (see Arid West data form)

Hydrology- The hydrology is provided by the adjacent topography and suspected high water table. The localized hydrology has likely been affected by surrounding development (reduced quantity and duration of inundation). Evidence of reduced hydrology included the establishment of upland plants in areas that were likely historical wetlands.

Upland/Wetland Transition- The wetland area is defined by a very gradual slope, wetland vegetation and saturated soils. The wetland vegetation transitions to upland vegetation with <50% OBL, FACW or FAC designations. In addition to the plant criteria used to delineate the wetland area, the upland/wetland transition was determined by digging several soil pits to determine the presence/absence of hydric soils.

Wetland B- A Category III Depressional Wetland was identified. The wetland is identified on the National Wetland Inventory Map as a PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded) The wetland scored a total of 16 points (7 points Improving Water Quality, 4 points Hydrologic and 5 points Habitat), utilizing the *2014 Eastern Washington Wetland Rating System*.

Wetland Vegetation- The wetland is characterized by reed canarygrass, equisetum and goldenrod.

Upland Vegetation- The dominant species consists of mullein, wild rose, upland grasses, hounds tongue, yarrow, thistle and upland grasses.

Soils- Cocolalla-Hardesty complex (see Arid West data form)

Hydrology- The hydrology is provided by the adjacent topography and suspected high water table. The localized hydrology has likely been affected by surrounding development (reduced quantity and duration of inundation). Evidence of reduced hydrology included the establishment of upland plants in areas that were likely historical wetlands.

Upland/Wetland Transition- The wetland area is defined by a very gradual slope, wetland vegetation and saturated soils. The wetland vegetation transitions to upland vegetation with <50% OBL, FACW or FAC designations. In addition to the plant criteria used to delineate the wetland area, the upland/wetland transition was determined by digging several soil pits to determine the presence/absence of hydric soils.

Wetland C- A Category III Depressional Wetland was identified. The wetland is identified on the National Wetland Inventory Map as a PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded). The wetland scored a total of 16 points (7 points Improving Water Quality, 4 points Hydrologic and 5 points Habitat), utilizing the *2014 Eastern Washington Wetland Rating System*.

Wetland Vegetation- The wetland is characterized by reed canarygrass, sedge (*Carex* spp.), equisetum, goldenrod.

Upland Vegetation- The dominant species consists of mullein, wild rose, upland grasses, hounds tongue, yarrow, thistle and goldenrod.

Soils- Cocolalla-Hardesty complex (See Arid West data form)

Hydrology- The hydrology is provided by the adjacent topography and suspected high water table. The localized hydrology has likely been affected by surrounding development (reduced quantity and duration of inundation). Evidence of reduced hydrology included the establishment of upland plants in areas that were likely historical wetlands.

Upland/Wetland Transition- The wetland area is defined by a very gradual slope, wetland vegetation and saturated soils. The wetland vegetation transitions to upland vegetation with <50% OBL, FACW or FAC designations. In addition to the plant criteria used to delineate the wetland area, the upland/wetland transition was determined by digging several soil pits to determine the presence/absence of hydric soils.

Wetland and Wetland Buffer Mitigation Plan

Introduction-

A wetland assessment was performed within 7 acres of (see attached site plans and attachments) on June 15, 2022. Three wetlands were identified as jurisdictional under the Spokane Municipal Code. The three Category 3 wetlands were labeled A, B and C (see attachment 4). The proposed mitigation wetland is designed at a re-establishment or creation ratio 2:1 (acreage of wetlands requiring replacement:acreage of wetlands altered); whereas the wetland buffer will be established at 150' (Category III wetland-high impact). The wetland mitigation area will be utilized for pretreated storm water detention and has been designed using applicable local and state standards. The recommendations contained herein are consistent with the wetland mitigation provisions of the Spokane Municipal Code.

The current wetlands (A, B and C) and their respective wetland buffers all have low habitat function and values based on a monoculture of grasses and small shrubs. It appears that hydrology has lessened in recent years due to the encroachment of development adjacent to the property. The once historical contiguous wetland area has been transitioning over time to upland area, dominated by upland plants caused by the lack of hydrology. The intent of the proposed wetland cell is to re-establish the contiguous wetland and its associated buffer.

The field assessment included a function analysis that compared existing conditions to the proposed wetland mitigation area to ensure functions and values will be enhanced. The proposed mitigation area was chosen for its suitable soils, topography, and high water table. Increased hydrology will be available to the mitigation area by routing pre-treated stormwater. Storm drainage calculations were completed as necessary components to the wetland mitigation plan.

Mitigation Sequencing-

The mitigation plan utilized guidance of section 17E.070.130 of the Spokane Municipal Code. The plan addresses mitigation sequencing as follows:

1. Avoiding the impact altogether by not taking certain action or parts of an action-
The project design recognized that the resulting wetland mitigation measures would improve overall function and value of the project area. The recommended action of increasing the overall contiguous portion of the wetland area and providing increased hydrology (quantity and duration) will ensure higher function and value over current

conditions. The project does not avoid impact by taking no action, rather it is designed to provide improved wetland function and value.

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts- The project design has reduced impacts by protecting areas that can function as a connected system with native plant enhancements and measures to connect hydrology that has been historically disrupted by development in the surrounding area.

3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment- The mitigation plan rectifies the identified impacts by restoring and enhancing the environment with native plantings and hydrology connectivity.

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action- The protection of the proposed wetland enhancement areas, including wetland buffers and connection of hydrology, will reduce or eliminate the impact over time.

5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments- The project recommends enhancement measures to increase habitat diversity, hydrologic connectivity and long-term protection of a contiguous wetland area.

6. Monitoring the impact and the compensation project and taking appropriate corrective measures. Mitigation may include a combination of the above measures- The mitigation plan specifies a long-term monitoring plan to ensure survivability and success of the mitigation measures.

Mitigation Replacement Values-

A total of 19,340 square feet of wetland C has been identified for replacement. The proposed wetland replacement area equals 38,680 square feet (2:1)¹. The one contiguous wetland cell (replacement for Wetland C, Wetland A and Wetland B) is 52,450 square feet (see attachment 4). The proposed replacement wetland will have a 150' buffer (to include Standard Buffer Width Averaging²) to ensure adequate protection of the function and values of the wetland. In addition to the increased wetland and buffer areas and additional hydrology, the proposed wetland and buffer areas will be treated with native plant enhancements that will increase function and value over existing conditions.

¹ Utilizing Table 17E.070.130-1 of Section 17E.070.130 of the Spokane Municipal Code (Re-establishment or Creation)

² Standard Buffer Width Averaging (*Section 17W.070.110*) will be applied to a portion of the proposed wetland buffer. The proposed buffer width will not be reduced by more than fifty percent of the standard buffer or be less than twenty-five feet.

Identification of Suitable Mitigation Area-

A mitigation site suitability assessment was performed based on: 1) habitat connectivity; 2) source of water; 3) soil conditions; and 4) proposed land use.

The area identified for the creation of the new wetland cell was based on providing a contiguous wetland area associated with the delineated wetlands A, B and C. It is suspected that adjacent development has reduced the overall hydrology to the area and that the wetlands that currently exist have been fragmented. The intent is to return some level of hydrology to support the new wetland cell and proposed vegetative plantings.

The area is currently characterized by a high-water table and the hydrology will be sustained and increased by providing pretreated stormwater runoff from the adjacent topography. Due to the naturally high ground water table and the suitable existing soils, the area is very conducive to re-establishing a vegetative buffer around the constructed wetland area. The recommended contiguous wetland and vegetated buffer areas will improve upon the habitat function and values relative to current conditions.

Recommended Mitigation Actions-

Constructed Wetland Cell- In order to properly mitigate for the replacement of portions of wetland C, one contiguous wetland cell (see attached drawings) was designed based on the available high water table and projected volumes of stormwater drainage from the proposed development.

Vegetation Buffer- In order to establish properly functioning conditions and increased habitat function and values within the identified mitigation area, a native plant design is recommended for the wetland buffer areas (see constructed wetland designs). The buffer areas will consist of thinleaf alder (*Alnus tenuifolia*), quaking aspen (*Populus tremuloides*), serviceberry (*Amelanchier alnifolia*), dogwood (*Cornus stolonifera*), mockorange (*Philadelphus lewisii*), chokecherry (*Prunus virginiana*), golden currant (*Ribes aureum*), rose (*Rosa woodsii*), dune willow (*Salix hookeriana*) and snowberry (*Symphoricarpos albus*). In addition to the native trees and shrubs, the mitigation area will include grass hydroseeding. The grass seed in wetter conditions will utilize a mix of blue wild rye (*Elymus glaucus*), western mannagrass (*Glyceria occidentalis*), meadow barley (*Hordeum brachyantherum*), American sloughgrass (*Beckmannia syzigachne*) and tufted hairgrass (*Deschampsia cespitosa*). Drier site conditions will utilize a mix of smooth brome (*Bromus inermis* Leyss), crested wheatgrass (*Agropyron cristatum*), tall fescue (*Festuca arundinacea*) and Dahurian wildrye (*Elymus dahuricus*).

<u>Species</u>	<u>Quantity</u>
Thinleaf alder	85
Quaking aspen	87
Serviceberry	113
Dogwood	410
Mockorange	52
Chokecherry	112
Golden currant	52
Rose	197
Dune willow	146
Snowberry	294

Detailed prescriptions and specifications for the implementation of the mitigation actions are outlined in the *Landscape Notes* provided in the mitigation design drawings.

Performance Standards- Trees and shrubs shall consist of large, commercially obtained nursery stock per WDFW and USACOE specifications, shall be regularly watered with an installed drip system and maintained until established (including regular weeding to keep plants from being shaded out or out-competed by weeds, and fully replaced as necessary for a period of at least five years). A minimum of eighty percent survival rate by the end of the third growing season will be required (WDFW guidelines).

Long-Term Preservation- Due to the close proximity of human activity, it is necessary to protect the mitigation area post re-vegetation. The planting areas will be protected by fencing. This recommendation will minimize foot traffic and will allow for successful re-vegetation of the area.

As-Built Documentation- Upon completion of the constructed wetland cell and re-vegetation, a qualified wetland biologist will provide an as-built design and photo-documentation to the City of Spokane. This documentation will serve as the basis for ongoing yearly documentation standards.

Monitoring and Evaluation- The mitigation areas will have established photo-documentation reference points. Additionally, an as-built photo will be taken to begin the series of post-implementation documentation. These reference points represent baseline habitat conditions and can be used to monitor the mitigation area through time. It is recommended that the mitigation area be photographed and a status of the performance standards be submitted to the City of Spokane on an annual basis for a minimum of five years. This monitoring will ensure that the mitigation area is being properly maintained and that properly functioning conditions are present within the wetland and wetland buffer areas.

REFERENCES

Washington Department of Ecology (WDOE). 2004. *Guidance on Wetland Mitigation-Part 2*. Publication 04-06-013b.

Washington Department of Fish and Wildlife (WDFW). *General Native Riparian & Shrub Steppe Planting Prescriptions for Shoreline Areas of the Columbia River*. WDFW Region 2 Publication.



U.S. Fish and Wildlife Service

National Wetlands Inventory




Parcel #25263.2907



March 15, 2022

Wetlands

-  Estuarine and Marine Deepwater
-  Estuarine and Marine Wetland

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











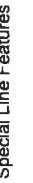
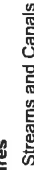





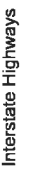


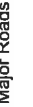
















-  Lake
-  Other
-  Riverine

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

Soil Map—Spokane County, Washington
(21st Assessment)



MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	 Streams and Canals
 Borrow Pit	 Transportation
 Clay Spot	 Rails
 Closed Depression	 Interstate Highways
 Gravel Pit	 US Routes
 Gravelly Spot	 Major Roads
 Landfill	 Local Roads
 Lava Flow	 Background
 Marsh or swamp	 Aerial Photography
 Mine or Quarry	
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Spokane County, Washington
Survey Area Data: Version 13, Aug 23, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 12, 2020—Aug 14, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1021	Cocolalla-Hardesty complex, 0 to 3 percent slopes	7.0	42.2%
3115	Northstar-Rock outcrop complex, 3 to 15 percent slopes	7.0	42.5%
7131	Urban land-Northstar, disturbed complex, 3 to 8 percent slopes	2.5	15.3%
Totals for Area of Interest		16.5	100.0%

Wetland name or number "A"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "A" - 21st Project Date of site visit: 6/15/22
 Rated by William T. Towey Trained by Ecology? Yes No Date of training 04/16/15
 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).
 Source of base aerial photo/map Google Earth, NFI Map, Soil Map, PHS info, HGM map - 1 Km - map

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

1. Category of wetland based on FUNCTIONS

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

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	H <u>M</u> L	H <u>M</u> L	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	<u>H</u> M L	
Value	<u>H</u> M L	H M <u>L</u>	H M <u>L</u>	TOTAL
Score Based on Ratings	<u>7</u>	<u>4</u>	<u>5</u>	<u>16</u>

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<u>II</u>	<u>III</u>
Alkali	<u>I</u>	
Wetland of High Conservation Value	<u>I</u>	
Bog and Calcareous Fens	<u>I</u>	
Old Growth or Mature Forest – slow growing	<u>I</u>	
Aspen Forest	<u>I</u>	
Old Growth or Mature Forest – fast growing	<u>II</u>	
Floodplain forest	<u>II</u>	
None of the above		

Wetland name or number A

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 points = 3 points = 3 points = 1	5
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</u> YES = 3 NO = 0	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > 2/3 of area Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 5 points = 3 points = 1 points = 0	5
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i> Area seasonally ponded is > 1/2 total area of wetland Area seasonally ponded is 1/4 - 1/2 total area of wetland Area seasonally ponded is < 1/4 total area of wetland	points = 3 points = 1 points = 0	3
Total for D 1	Add the points in the boxes above	13

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

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

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

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

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

Wetland name or number A


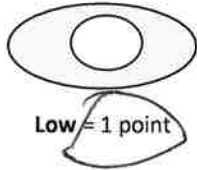
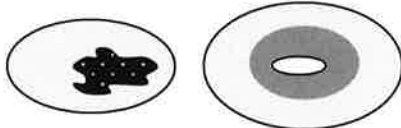
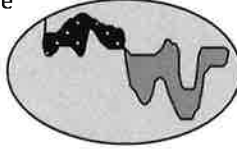
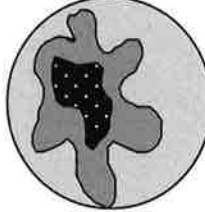
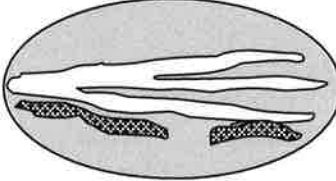
DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconstricted surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 8 points = 4 points = 4 points = 0	8
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 deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 4 points = 2 points = 0	2
Total for D 4	Add the points in the boxes above	10
Rating of Site Potential If score is: <u>12-16 = H</u> 6-11 = M <u>0-5 = L</u> Record the rating on the first page		

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0
Rating of Landscape Potential If score is: <u>3 = H</u> <u>1 or 2 = M</u> 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. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient 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. Explain why _____ There are no problems with flooding downstream of the wetland	points = 2 points = 1 points = 0 points = 0	0
D 6.2. Has the site has 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	0
Rating of Value If score is: <u>2-4 = H</u> <u>1 = M</u> 0 = L Record the rating on the first page		

Wetland name or number

A

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i></p> <p><input checked="" type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants $> 12-40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $> 30\%$ cover) <input type="checkbox"/> Forested (areas where trees have $> 30\%$ cover)</p> <p style="text-align: right;">4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0</p>		1
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> Yes = 3 points & go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> Yes = 3 No = 0</p>		0
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft^2. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species _____</p> <p style="text-align: right;">Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0</p>		0
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> </div> <p>All three diagrams in this row are High = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>		Figure__ 1

Wetland name or number A

H 1.6. Special habitat features <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		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 ~~0-6 = L~~ Record the rating on the first page

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

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

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

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

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: "A" 21st City/County: Spokane State: Washington Sampling Date: 6/15/22
 Applicant/Owner: _____ Sampling Point: Wetland
 Investigator(s): Bill Towey (TES) Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88
 Soil Map Unit Name: Coccolulla-Hardesty Complex NWI classification: PEMIC
 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? No Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: The slope wetland has flowing water.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>66% (A/B)</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>80</u> x 2 = <u>160</u> FAC species _____ x 3 = _____ FACU species <u>20</u> x 4 = <u>80</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>240</u> (B) Prevalence Index = B/A = <u>2.4</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Phalaris arundinacea</u> <u>60%</u> <u>Y</u> <u>FACW</u> 2. <u>Equisetum hyemale</u> <u>20%</u> <u>Y</u> <u>FACW</u> 3. <u>Solidago spp.</u> <u>20%</u> <u>Y</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: _____				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

"A"

SOIL Cocolalla - Hardesty Complex

Sampling Point: DP #1 (Wetland)

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		
0-21"	10YR2/1					silt loam	suburbed
21-36"						silt loam	mottling.

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

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

Indicators for Problematic Hydric Soils³:

- | | | |
|------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input checked="" type="checkbox"/> Redox Depressions (F8) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: * several soil pits dug to identify transition from wetland/upland.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- | | | |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: A-21⁵⁺ City/County: Spokane Sampling Date: 6/15/22
 Applicant/Owner: _____ State: Washington Sampling Point: Upland
 Investigator(s): Bill Towe (TES) Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88
 Soil Map Unit Name: Cowlitz-Hardisty Complex NWI classification: ✓
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: <u>The slope wetland has flowing water.</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
				FAC species _____ x 3 = _____
				FACU species <u>100</u> x 4 = <u>400</u>
				UPL species _____ x 5 = _____
				Column Totals: <u>100</u> (A) <u>400</u> (B)
				Prevalence Index = B/A = <u>4.0</u>
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Solidago spp.</u>	<u>20%</u>	<u>4</u>	<u>FACU</u>	_____ Dominance Test is >50%
2. <u>Achillea millefolium</u>	<u>25%</u>	<u>4</u>	<u>FACU</u>	_____ Prevalence Index is ≤ 3.0 ¹
3. <u>Upland grasses</u>	<u>55%</u>	<u>4</u>	<u>FACU</u>	_____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				_____ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
<u>100%</u> Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks:				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>

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

SOIL

Coccolalla-Hardisty Complex

"A" upland

Sampling Point: DP #1 (Wetland)

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		
0-36	10YR 2/1							Dry - no mottling

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

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

Indicators for Problematic Hydric Soils³:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

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

Remarks:

Wetland name or number "B"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "B" - 21st Project Date of site visit: 6/15/22
 Rated by William T. Towey Trained by Ecology? Yes No Date of training 04/16/15
 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

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

Source of base aerial photo/map Google Earth, NWI Map, Soil Map, PHS info, HGM maps, 1 km map.

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

1. Category of wetland based on FUNCTIONS

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

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
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			4			5			16

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	II	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above		

Wetland name or number 11 B1

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 points = 3 points = 3 points = 1	5
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > 2/3 of area Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 5 points = 3 points = 1 points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i> Area seasonally ponded is > 1/2 total area of wetland Area seasonally ponded is 1/4 - 1/2 total area of wetland Area seasonally ponded is < 1/4 total area of wetland	points = 3 points = 1 points = 0	3
Total for D 1	Add the points in the boxes above	13

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

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

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

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

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

Wetland name or number B

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

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

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




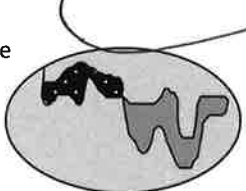

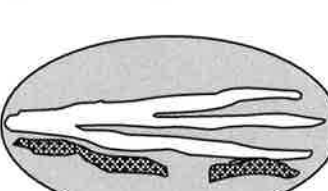
Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ points = 0 There are no problems with flooding downstream of the wetland points = 0		
D 6.2. Has the site has 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	0

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

Wetland name or number

11
B

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i></p> <p><input checked="" type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input type="checkbox"/> Emergent plants $> 12-40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $> 30\%$ cover) <input type="checkbox"/> Forested (areas where trees have $> 30\%$ cover)</p> <p style="text-align: right;">4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0</p>		1
<p>H 1.2. Is one of the vegetation types Aquatic Bed?</p> <p style="text-align: right;">Yes = 1 No = 0</p>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> Yes = 3 points & go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> Yes = 3 No = 0</p>		0
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft^2. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species _____</p> <p style="text-align: right;">Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0</p>		0
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> </div> <p>All three diagrams in this row are High = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>		Figure__ 1

Wetland name or number 11 B 11

<p>H 1.6. Special habitat features <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.</p> <p><input type="checkbox"/> Cattails or bulrushes are present within the wetland.</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.</p> <p><input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity</p> <p><input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
<p>Total for H 1</p> <p style="text-align: right;">Add the points in the boxes above</p>	2

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

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

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

<p>H 3.0. Is the habitat provided by the site valuable to society?</p> <p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan <p>Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>	0
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Rating of Value If score is: 2 = H 1 = M ~~0 = L~~ Record the rating on the first page

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: B-21 City/County: Spokane Sampling Date: 6/15/22
 Applicant/Owner: _____ State: Washington Sampling Point: Wetland
 Investigator(s): Bill Towey (TES) Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88
 Soil Map Unit Name: Coccolulla-Hardesh Complex NWI classification: PENK #
 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? No Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: The slope wetland has flowing water.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>90</u> x 2 = <u>180</u> FAC species _____ x 3 = _____ FACU species <u>10</u> x 4 = <u>40</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>220</u> (B) Prevalence Index = B/A = <u>2.2</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Phalaris arundinacea</u> <u>65%</u> <u>FACW</u> 2. <u>Equisetum hyemale</u> <u>25%</u> <u>FACW</u> 3. <u>Solidago spp.</u> <u>10%</u> <u>N FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ <small>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</small>

SOIL

Coccolaila-Hardisty Complex

Sampling Point: DP #1 (Wetland)

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		
0-21	10YR	2/1					silt loam	subsoil
21-36							silt loam	mottling

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Several soil pits dug to identify wetland/upland transition

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

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): 6"

Wetland Hydrology Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: B-21^{5x} City/County: Spokane Sampling Date: 6/15/22
 Applicant/Owner: _____ State: Washington Sampling Point: Upland
 Investigator(s): Bill Towey (TES) Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88
 Soil Map Unit Name: Coeur d'Alene-Hardesh Complex NWI classification: /
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: The slope wetland has flowing water.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Achillea millefolium</u>	<u>15%</u>	<u>N</u>	<u>FACU</u>	
2. <u>Cynoglossum utriculale</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>	
3. <u>Verbascum thapsus</u>	<u>2.0%</u>	<u>N</u>	<u>FACU</u>	
4. <u>Solidago spp.</u>	<u>55%</u>	<u>Y</u>	<u>FACU</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species 100 x 4 = 400

UPL species _____ x 5 = _____

Column Totals: 100 (A) 400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤ 3.0¹

___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Coodalla
Hardesty Complex

Sampling Point: DP #1 (Wetland)

Upland

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				
0-36	10YR 2/1						silty loam	dry		no matting

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 :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

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

Remarks:

Wetland name or number "C"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "C"-21st Project Date of site visit: 6/15/22
 Rated by William T. Towey Trained by Ecology? Yes No Date of training 04/16/15
 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

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

Source of base aerial photo/map Google Earth, NWT Map, Soil Map, PHS info, HGM map, 1 km - map

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

1. Category of wetland based on FUNCTIONS

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

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
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			4			5			16

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	II	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above		

Wetland name or number "C"

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 points = 3 points = 3 points = 1	5
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</u> YES = 3 NO = 0	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > 2/3 of area Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 5 points = 3 points = 1 points = 0	5
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i> Area seasonally ponded is > 1/2 total area of wetland Area seasonally ponded is 1/4 - 1/2 total area of wetland Area seasonally ponded is < 1/4 total area of wetland	points = 3 points = 1 points = 0	3
Total for D 1	Add the points in the boxes above	13

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

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

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

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

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

Wetland name or number C

DEPRESSIONAL WETLANDS

Points
(only 1 score
per box)

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet

Wetland has an intermittently flowing outlet

Wetland has a highly constricted permanently flowing outlet

Wetland has a permanently flowing unconfined surface outlet

(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")

points = 8

points = 4

points = 4

points = 0

8

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

Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8

Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6

The wetland is a headwater wetland points = 4

Seasonal ponding: 1 ft - < 2 ft points = 4

Seasonal ponding: 6 in - < 1 ft points = 2

Seasonal ponding: < 6 in or wetland has only saturated soils points = 0

2

Total for D 4

Add the points in the boxes above

10

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

Record the rating on the first page

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

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

0

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

Yes = 1 No = 0

0

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

Yes = 1 No = 0

0

Total for D 5

Add the points in the boxes above

0

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

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. Do not add points.

Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland

points = 2

Surface flooding problems are in a sub-basin farther down-gradient

points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

Explain why _____

points = 0

There are no problems with flooding downstream of the wetland

points = 0

0

D 6.2. Has the site has 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


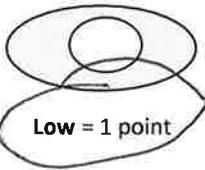
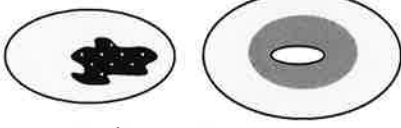
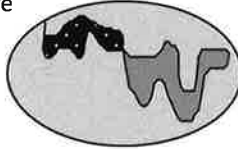
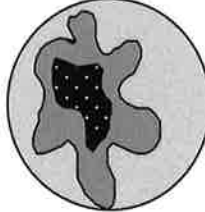
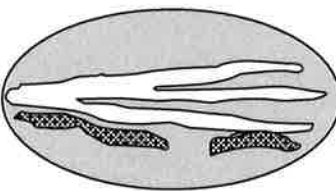
Add the points in the boxes above

0

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

Record the rating on the first page

Wetland name or number C

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of the plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.</i> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants $> 12-40$ in ($> 30-100$ cm) high are the highest layer with $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with $> 30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $> 30\%$ cover) <input type="checkbox"/> Forested (areas where trees have $> 30\%$ cover)		4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> Yes = 3 No = 0		Yes = 3 No = 0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft^2 . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species ____		Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0
H 1.5. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.		Figure__
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  None = 0 points </div> <div style="text-align: center;">  Low = 1 point </div> <div style="text-align: center;">  Moderate = 2 points </div> </div> <p>All three diagrams in this row are High = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: center;">Riparian braided channels with 2 classes</p>		1

Wetland name or number C

<p>H 1.6. Special habitat features <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.</p> <p><input type="checkbox"/> Cattails or bulrushes are present within the wetland.</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.</p> <p><input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity</p> <p><input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
<p>Total for H 1</p>	2

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

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p> <p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>37%</u> + [(% moderate and low intensity land uses)/2] = <u>37%</u> > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0</p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat <u>47%</u> + [(% moderate and low intensity land uses)/2] = <u>47%</u> Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0</p>	2
<p>H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0</p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs Yes = 3 (No = 0)</p>	0
<p>Total for H 2</p>	5

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

<p>H 3.0. Is the habitat provided by the site valuable to society?</p> <p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan <p>Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>	0
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---

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

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: C-21st City/County: Spokane State: Washington Sampling Date: 6/15/22
 Applicant/Owner: _____ Sampling Point: C SP Wetland
 Investigator(s): Bill Towey (TES) Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88
 Soil Map Unit Name: Cocolalla-Hardisty Complex NWI classification: PEM1C
 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? NO Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <u>The slope wetland has flowing water.</u> <p align="center" style="font-size: 1.2em; color: blue;">all three wetland criteria met.</p>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Phalaris arundinacea</u>	<u>85%</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Equisetum hyemale</u>	<u>20%</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Solidago spp.</u>	<u>15%</u>	<u>N</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	_____
FACW species <u>85</u>	x 2 =	<u>170</u>
FAC species	x 3 =	_____
FACU species <u>15</u>	x 4 =	<u>60</u>
UPL species	x 5 =	_____
Column Totals: <u>100</u> (A)		<u>230</u> (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

Dominance Test is >50%

Prevalence Index is ≤ 3.0¹

____ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks: _____

SOIL Cocolalla - Hardisty Complex

"C"

Sampling Point: DP #1 (Wetland)

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		
0-12	10YR	2/1					silt loam	mottling / saturated
24-36"	10YR	2/1 (wet)					" "	mottling
	2.5Y	6/1 (dry)						

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 :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: poorly drained several soil pits dug to determine upland/wetland boundary.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:

Surface Water Present? Yes No Depth (inches): 5"

Water Table Present? Yes No Depth (inches): 5"

Saturation Present? (includes capillary fringe) Yes No Depth (inches): 12"

Wetland Hydrology Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: C-21st City/County: Spokane Sampling Date: 6/15/22
 Applicant/Owner: _____ State: Washington Sampling Point: Upland
 Investigator(s): Bill Towey (TES) Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88
 Soil Map Unit Name: Cocallalla-Hardisty Complex NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: The slope wetland has flowing water.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>100</u> x 4 = <u>400</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4.0</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤ 3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____)				
1. <u>Yerbascum thapicus</u>	<u>50%</u>	<u>N</u>	<u>FACU</u>	
2. <u>Rosa spp.</u>	<u>20%</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Cynoglossum officinale</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	
4. <u>Achillea millefolium</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>	
5. _____				
6. <u>Cirsium arvense</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>	
7. <u>Solidago spp.</u>	<u>50%</u>	<u>Y</u>	<u>FACU</u>	
8. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks:				

SOIL

Cocolalla - Handesty Complex

Upland

Sampling Point: DP #1 (Wetland)

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		
0-12"	10YR 2/1						silt loam	no mottling
12-36"	10YR 2/1						silt loam	dry no mottling

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.)

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

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): _____

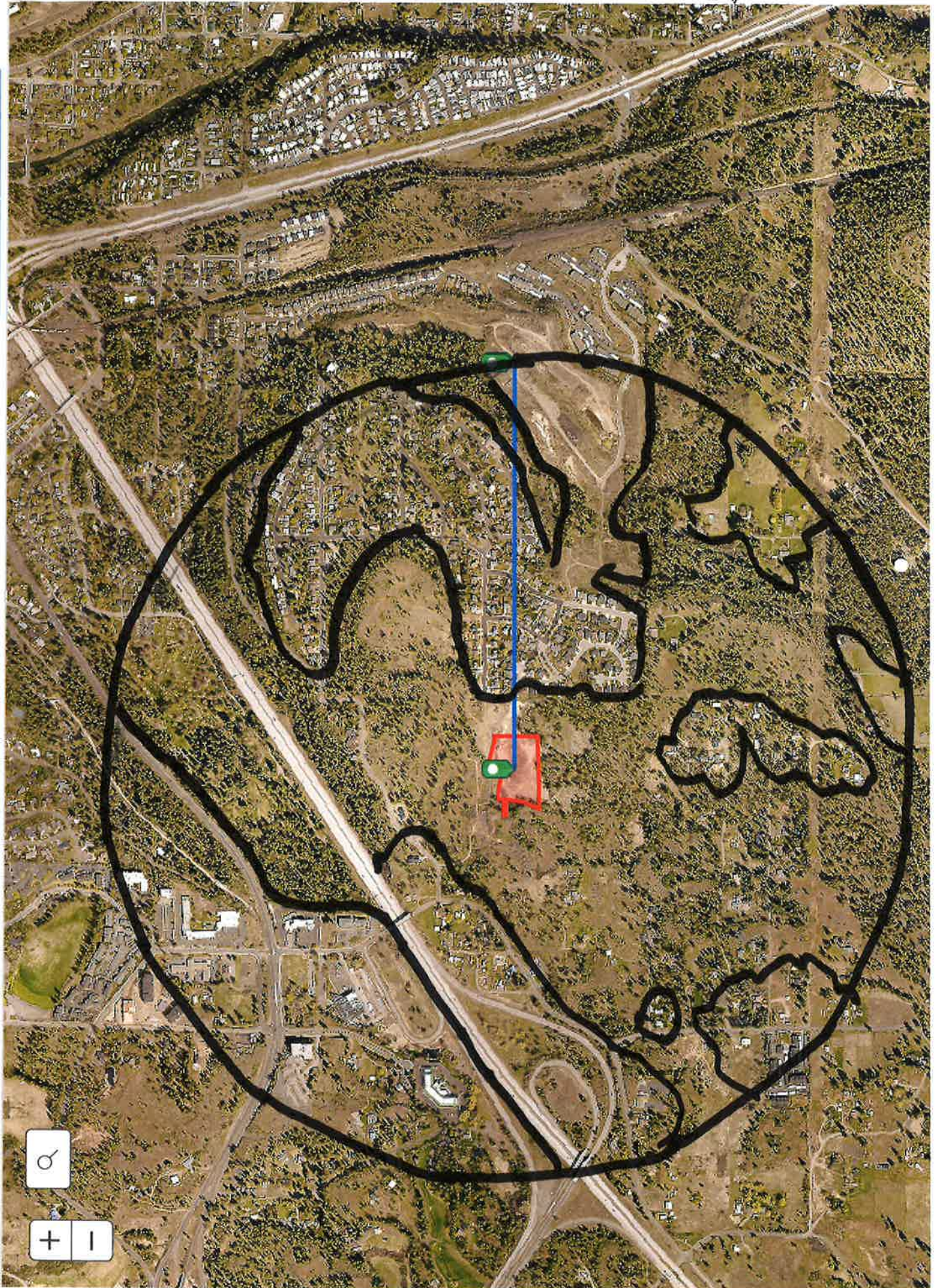
Wetland Hydrology Present? Yes _____ No

Remarks:

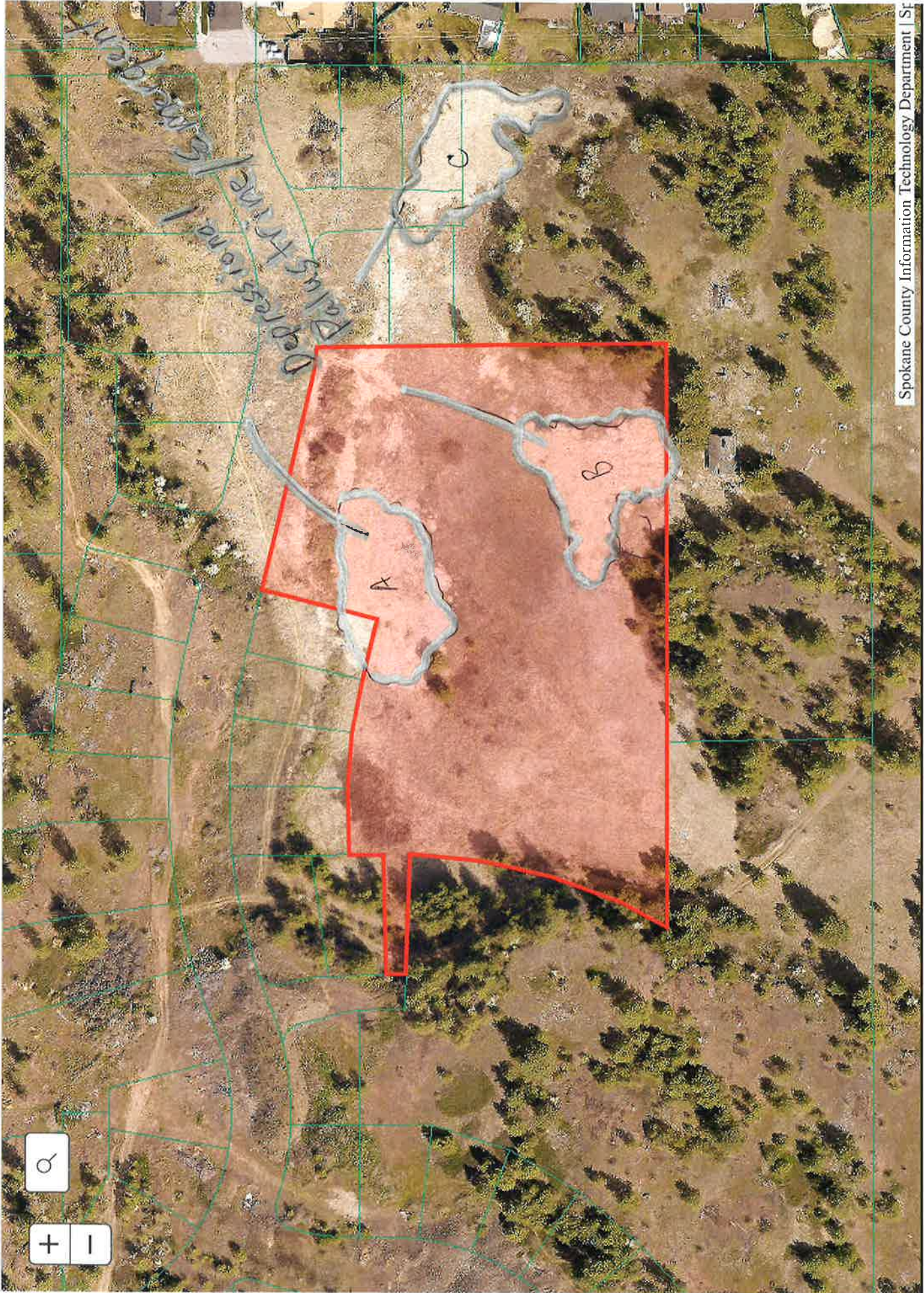
1 Km - Map

More Info

Measure

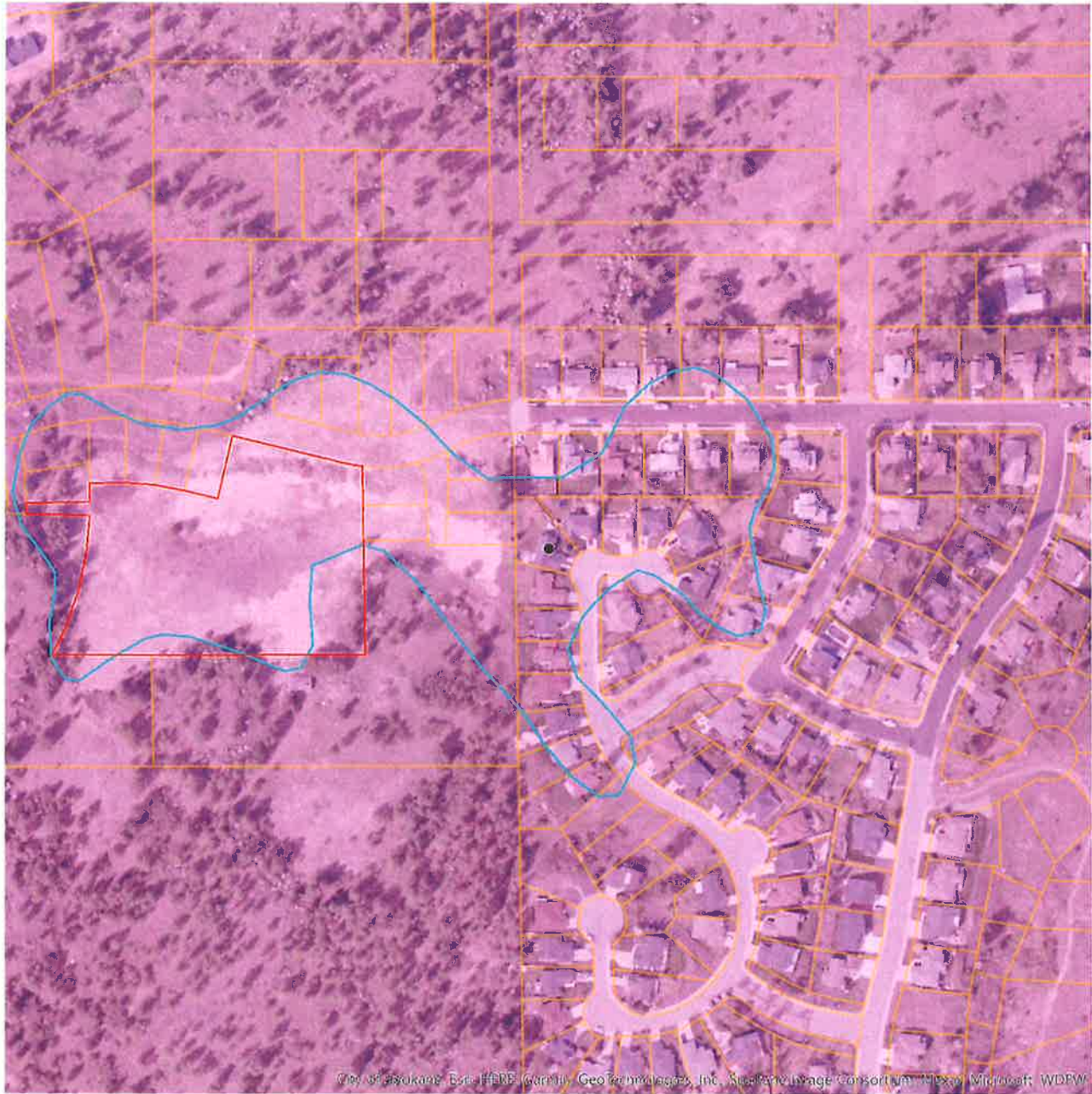


Measure More Info





Priority Habitats and Species on the Web



City of Escondido, Escondido, CA. HERE (formerly GeoEye) Imagery, Inc., Satellite Image Consortium (Maxar, Microsoft, WDPW)

Report Date: 03/15/2022, Parcel ID: [25263.2907](#)

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Mule deer	N/A	N/A	No
Freshwater Emergent Wetland	N/A	N/A	No
Big brown bat	N/A	N/A	Yes
Townsend's Big-eared Bat	N/A	Candidate	Yes

PHS Species/Habitats Details:

Mule deer	
Scientific Name	<i>Odocoileus hemionus hemionus</i>
Priority Area	Regular Concentration
Site Name	LINCOLN-SPOKANE MULE DEER HERD
Accuracy	1/4 mile (Quarter Section)
Notes	REGULAR CONCENTRATION IN WINTER TIME IN AREAS OF SHRUB. DEER ARE CONCENTRATED ON THE EDGE OF AG IN SHRUBS AND SPARCER TREED HABITAT. SOUTHERN EDGE OF LAKEROOSEVELT AND LAKE SPOKANE. MORE COMMONLY UTILIZING WINTER WHEAT AREAS.
Source Record	920012
Source Dataset	PHSREGION
Source Name	ATAMIAN, MIKE
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00612
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Big brown bat	
Scientific Name	<i>Eptesicus fuscus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Townsend's Big-eared Bat	
Scientific Name	<i>Corynorhinus townsendii</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

DISCLAIMER: This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.