

**Sewall Wetland Consulting, Inc.**

PO Box 880  
Fall City, WA 98024

Phone: 253-859-0515

March 22, 2022

KZ Freehold LLC  
c/o Nick Zito and Kathleen Kelleher  
6420 Wilson Creek Road  
Ellensburg, Washington 98926

RE: Critical Area Report – Parcels #718434 & 284134  
Kittitas County, Washington  
SWC Job #22-101

Dear Nick and Kathleen,

This report describes our observations of any jurisdictional wetlands, streams and/or buffers on or within 200' of Parcels #718434 & 284134.



*Above: Vicinity Map of site*

The two abutting parcels are located within the NE  $\frac{1}{4}$  of Section 6 Township 18 North, Range 19 East of the W.M in Kittitas County, Washington, and the SE  $\frac{1}{4}$  of Section 31, Township 19 North, Range 19 East. The two parcels total 174.15 acres in size.



*Above: Aerial photograph of the study area from Kittitas Mapsifter website.*

## **METHODOLOGY**

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site and areas within 200' of the site in February and March of 2022.

The site was reviewed using methodology described in the ***Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*** (USACOE September 2008) as required by the US Army Corps of Engineers starting in June of 2009. This is the

methodology currently recognized by Kittitas County for wetland determinations and delineations. The site was also reviewed using methodology described in Soil colors were identified using the 1990 Edited and Revised Edition of the **Munsell Soil Color Charts** (Kollmorgen Instruments Corp. 1990).

Wetlands in Kittitas County are rated using the 2014 Washington State Department of Ecology Washington State *Wetland Rating System for Eastern Washington, 2014 Update* dated June 2014 Publication No. 14-06-018.

The ordinary high water mark (OHWM) of any streams was located based upon the criteria described in the *Washington Department of Ecology draft publication Determining The Ordinary High Water Mark on Streams In Washington State* (WADOE Publication 08-06-001, March 2008).

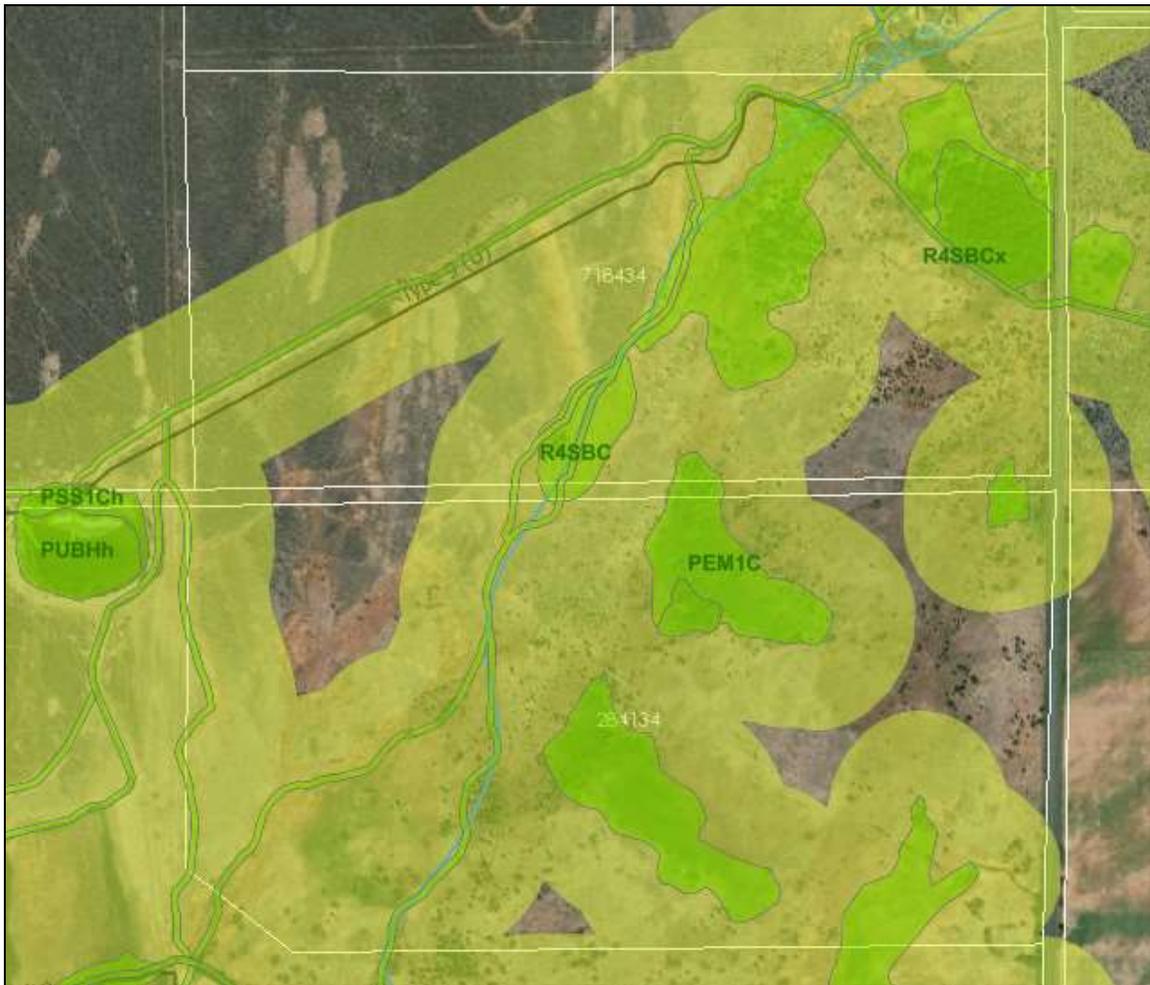
## **OBSERVATIONS**

### *Existing Site Documentation.*

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the Kittitas Taxsifter website, National Wetland Inventory Map, WDNR Fpars Stream Typing Map, Kittitas County flood & critical areas mapping, WDFW Priority Habitats and Species Maps, and the NRCS Soil Survey online mapping and Data.

### **Kittitas Taxsifter Website**

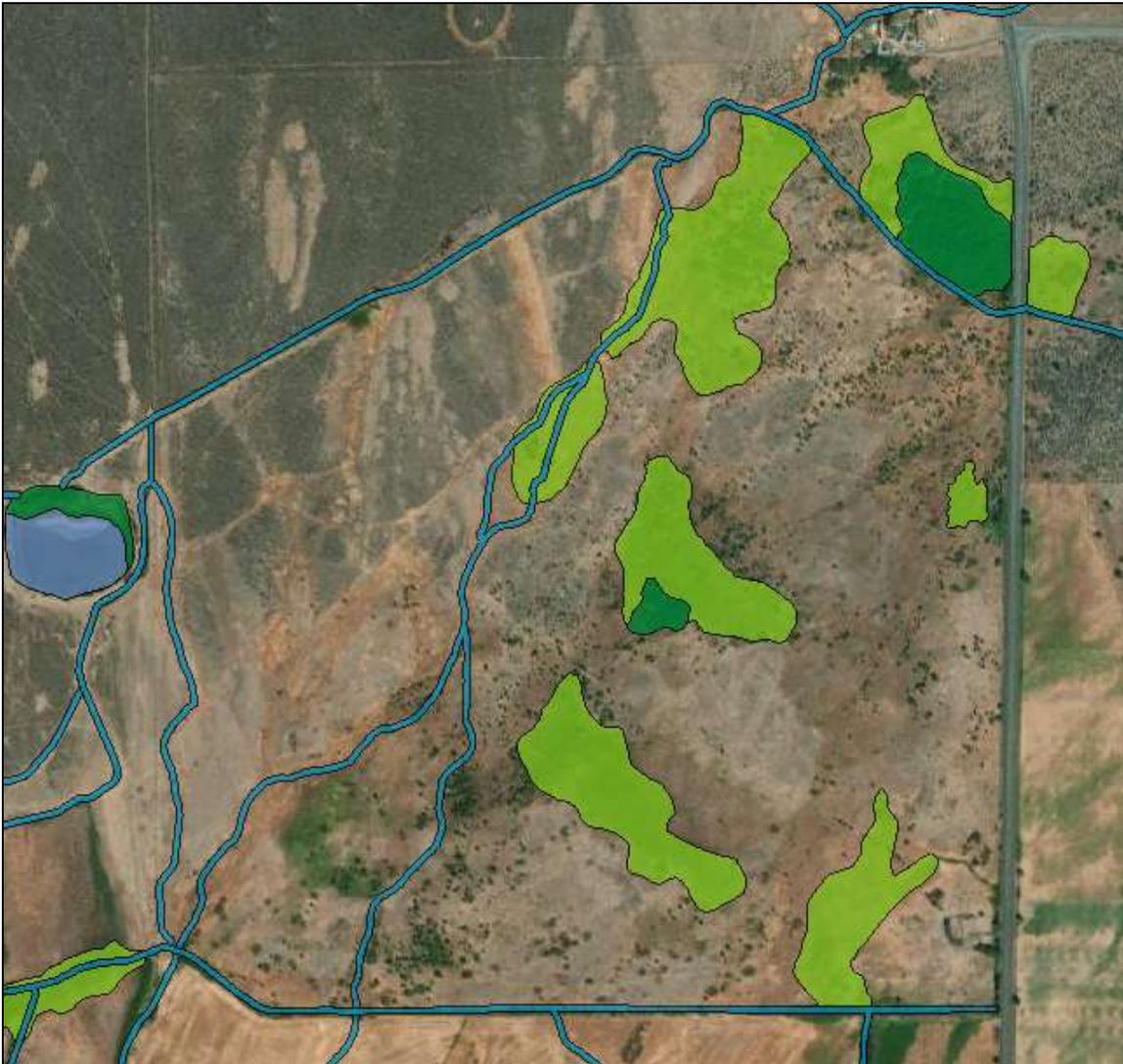
The Kittitas Taxsifter website with streams and wetland layers activated depicts several emergent wetlands located within areas that were historically flood irrigated. There is also a Type N stream passing through the center of the site as well as several of the agricultural ditches and other areas as emergent wetlands.



*Above: Aerial photograph of the study area from Kittitas Mapsifter website with wetland, floodplain and DNR water type layers activated.*

### **National Wetlands Inventory (NWI)**

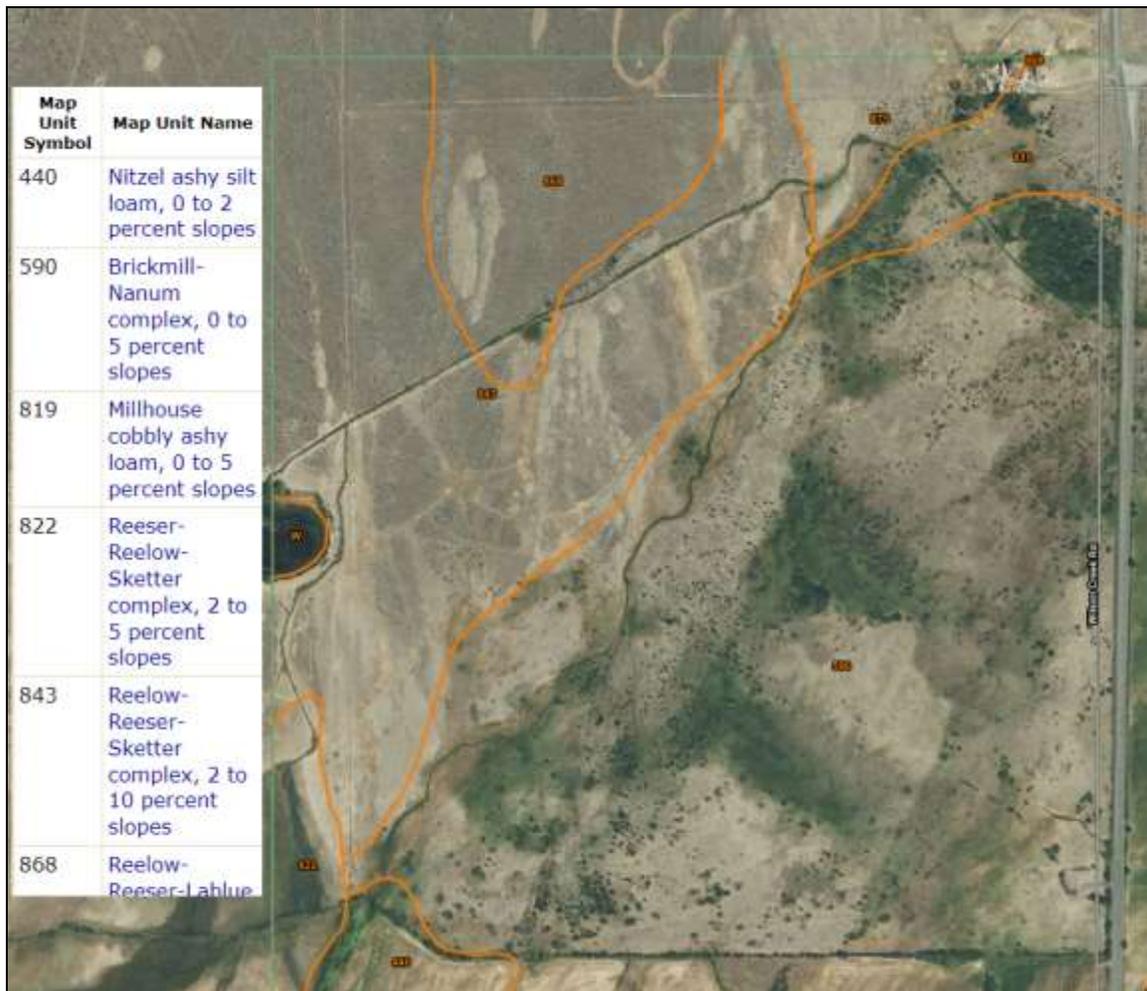
The NWI map depicts the same wetlands and streams as the Kittitas County website. In fact the Taxesifter mapping was taken from the NWI maps. These wetlands were interpreted from aerial photographs by the US Fish and Wildlife Service using 2017 aerial photographs with no ground-truthing.



*Above: NWI map of the area of the site*

### **Soil Survey**

According to the NRCS Soil Mapper website, the site is mapped as containing several well drained soil series including Mitzel ashly silt loam, Brickmill-Nanum complex, Millhouse cobbly ashly loam, and Reeser-Reelow-Sketter complex. None of these soils are considered "hydric" or wetland soils according to the publication Hydric Soils of the United States (USDA NTCHS Pub No.1491, 1991).



*Above: NRCS soil map of the site.*

### **WADNR FPARS website**

According to the WADNR FPARS website with stream types layers activated, there is a Type N stream that passes through the site. In addition some of the agricultural irrigation ditches are depicted as “unclassified”.



*Above: WDNR Fpars Stream Mapping of the area of the site.*

### **WDFW Priority Habitats and Species Maps**

The WDFW Priority Habitats and Species mapping for the site depicts the site within the Township in which both the northern spotted owl and golden eagle are present. In addition, the site is within an overlay of eastside steppe vegetation, as well as the Ellensburg mule deer winter range (see attached WDFW data sheets).

## **Field observations**

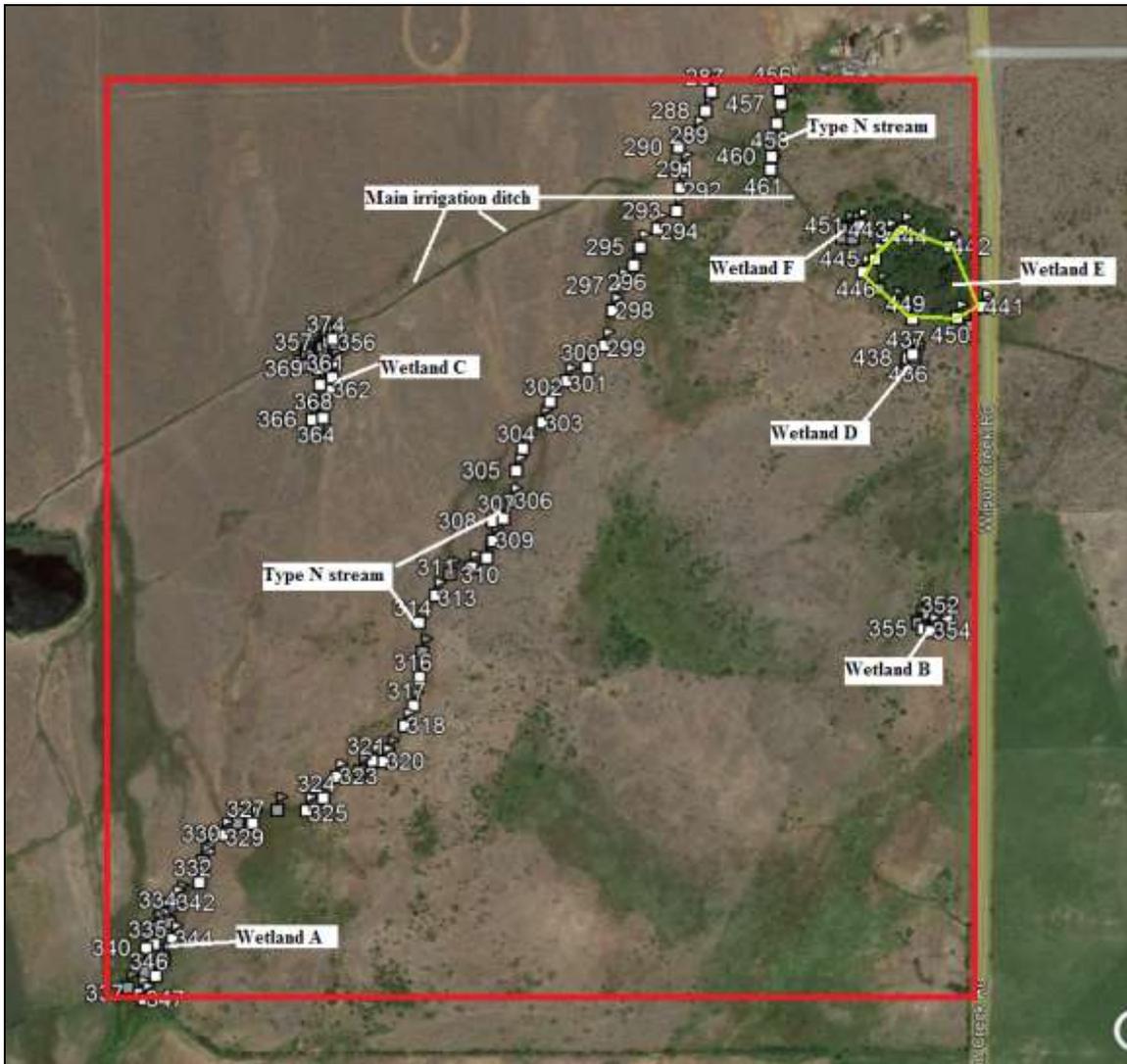
As previously described, the site is a large area of rangeland that is sporadically used to graze cattle. The site slopes from a high point on the northeast to a low on the southwest corner. A large irrigation ditch passes across the north end of the site and drains westerly towards a large stock watering pond located off-site to the west. This ditch has numerous turnouts which were used to irrigate grazing lands south of the ditch in the past. There is also an irrigation ditch along the east side of the site which has several turnouts which allowed water to drain to the southwest. A small stream passes through the center of the site and is bisected by several irrigation ditches. The channel is poorly defined and leaves the site in a dispersed manner through a grazed and trampled wetland (Wetland A). A second stream enters the site to the east of the Type N water from a pond dug in the channel off-site to the north. This stream enters the main irrigation channel on the site and does not flow any further south.

Many of the wetlands depicted in the NWI and County mapping incorrectly identify patches of dry, timothy grasslands as wetlands. Most of the site is vegetated with scattered hawthorne, sagebrush, rose and a groundcover of cheatgrass and some bunchgrass (*Festuca* spp.).

The soils throughout the site outside of the wetlands are a cobbly or very gravelly loam with chromas of 2 or 3 with no hydric soil indicators or evidence of wetland hydrology. Old drainage patterns of historic flood irrigation are scattered throughout the site and are generally vegetated with cheatgrass and are dry. Most wetlands inventoried by the NWI and County are just a reflection of past flood irrigated lands and do not meet wetland criteria for either vegetation or soils.

## **Wetlands**

A total of six (6) wetlands were found on the site and one Type N stream. Below is a description of these critical areas;



*Above: Overview map of critical areas on the site.*

### ***Type N Streams***

As previously stated, a seasonally flowing stream passes through the site entering on the north property line near the eastern side of the site and flows diagonally across the site to the southwest corner. This stream had a small amount of flow on its north end but much of the flow enters the irrigation channel across the north end of the site. The channel below the irrigation ditch was dry during our site visit and it appears that water only flows through this feature across the site in spring melt periods. Small areas of the channel had some standing water but no flow was observed during our site visit.

This stream has a width between OHWM of 18” and as a result, the centerline was located with gps points 287-337. At the southwest corner of the site, the stream loses its defined channel in a trampled emergent wetland (Wetland A). It appears that water may collect on the surface of this area and as a result this area is heavily trampled by cattle.

A second channel previously mentioned, drains onto the site from the north east of the first channel, and was identified with gps points 456-461. This stream drains completely into an irrigation ditch that drains to the west and has no continuous channel below the ditch.

Due their narrow widths, and discontinuous channel character, these streams best meet the criteria of a Type N water.

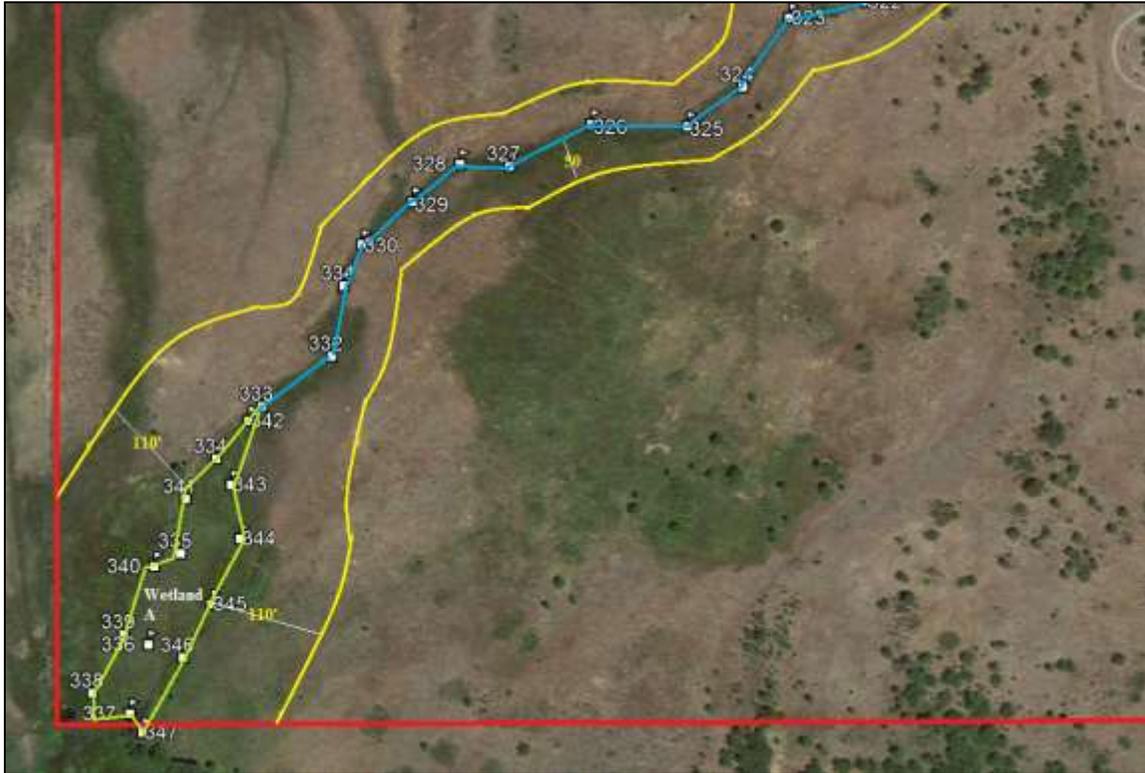
According to KCMC 17A.04.030.4, Type N streams have a 40’ buffer measured from the ordinary high water mark in the Columbia Plateau region.

Stream Type	Riparian Management Zone Widths <sup>1,2</sup>	
	Cascade Ecoregion (feet)	Columbia Plateau Ecoregion (feet)
Type S (Shoreline)	See the SMP	See the SMP
Type F	150	100
Type Np	100	65
Type Ns	50	40

**Wetland A**

As previously mentioned, the southwest corner of the site contains an emergent wetland which has a the small Type N stream discharging into and dispersing through the wetland.

This wetland was flagged with orange wire flags labeled A1-A110 (gps points 338-347).



*Above: Wetland A and Type N stream on southeast corner of site.*

The wetland is vegetated with a mix of sedge, baltic rush, soft rush.

Soil pits excavated within this wetland area revealed a cobbly loam with a soil color of 10YR 2/1 with common, medium, distinct, redoximorphic concentrations. Soils saturated at the surface during our non-growing season observation of the wetland.

Using the 2014 Washington State Department of Ecology Washington State *Wetland Rating System for Eastern Washington, 2014 Update* dated June 2014 Publication No. 14-06-018, and rating this wetland as a “depressional” wetland, this wetland scored a total of 16 points with 7 for habitat. This indicates a Category III wetland. According to Kittitas County Municipal Code Table 17A.070.030, Category III wetlands with a moderate land use have a 110’ buffer measured from the wetland edge.

**Table 17A.07.030: Standard Buffer Widths**

Category of Wetland	Land Use with Low Impact <sup>1</sup>	Land Use with Moderate Impact <sup>2</sup>	Land Use with High Impact <sup>3</sup>
I	125 ft	190 ft	250 ft
II	100 ft	150 ft	200 ft
III	75 ft	110 ft	150 ft
IV	25 ft	40 ft	50 ft

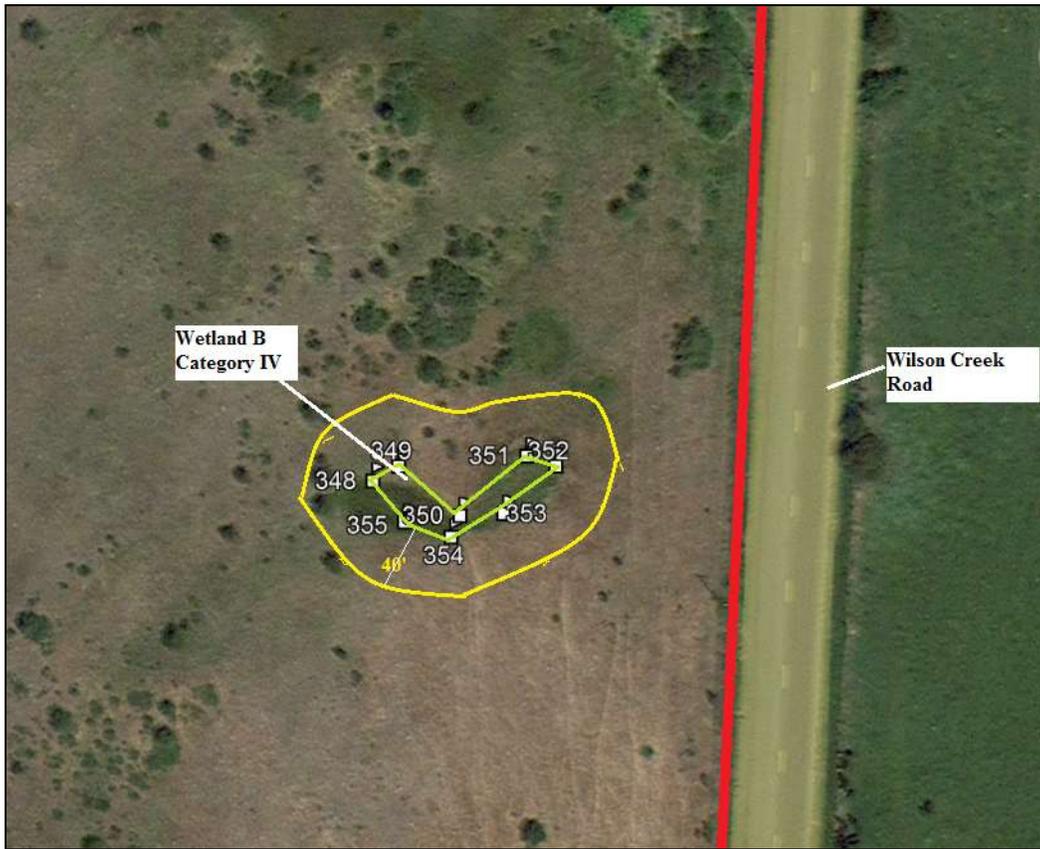
**Wetlands B, C, D & F**

Wetlands B, C, D & F consists of very small, isolated, emergent spring fed wetlands scattered on the north end of the site. These wetlands all have groundwater discharging on the surface and dispersing as it drains away from the “spring” itself. Wetland B was flagged with orange wire flags labeled B1-B8 (gps 348-355), Wetland C flags C1-C19 (gps points 356-374), Wetland D flags D1-D6 (gps points 434-439) and Wetland F flags F1-F5 (gps 451-455).

These wetlands are vegetated with a mix of soft rush, sedge, dock and in Wetland C, water cress.

Soil pits excavated within these wetlands all revealed black (10YR 2/1) cobbly loam with few, fine, faint, redoximorphic concentrations. Soils saturated at the surface during our non-growing season observation of the wetland and all had surface seepage draining to the edges of the wetlands where water infiltrated into more pervious soils.

Using the 2014 Washington State Department of Ecology Washington State *Wetland Rating System for Eastern Washington, 2014 Update* dated June 2014 Publication No. 14-06-018, and rating these wetlands as a “slope” wetlands, they all came out with 15 total points indicating a Category IV wetlands. According to Kittitas County Municipal Code Table 17A.070.030, Category IV wetlands with a moderate land use have a 40’ buffer measured from the wetland edge.

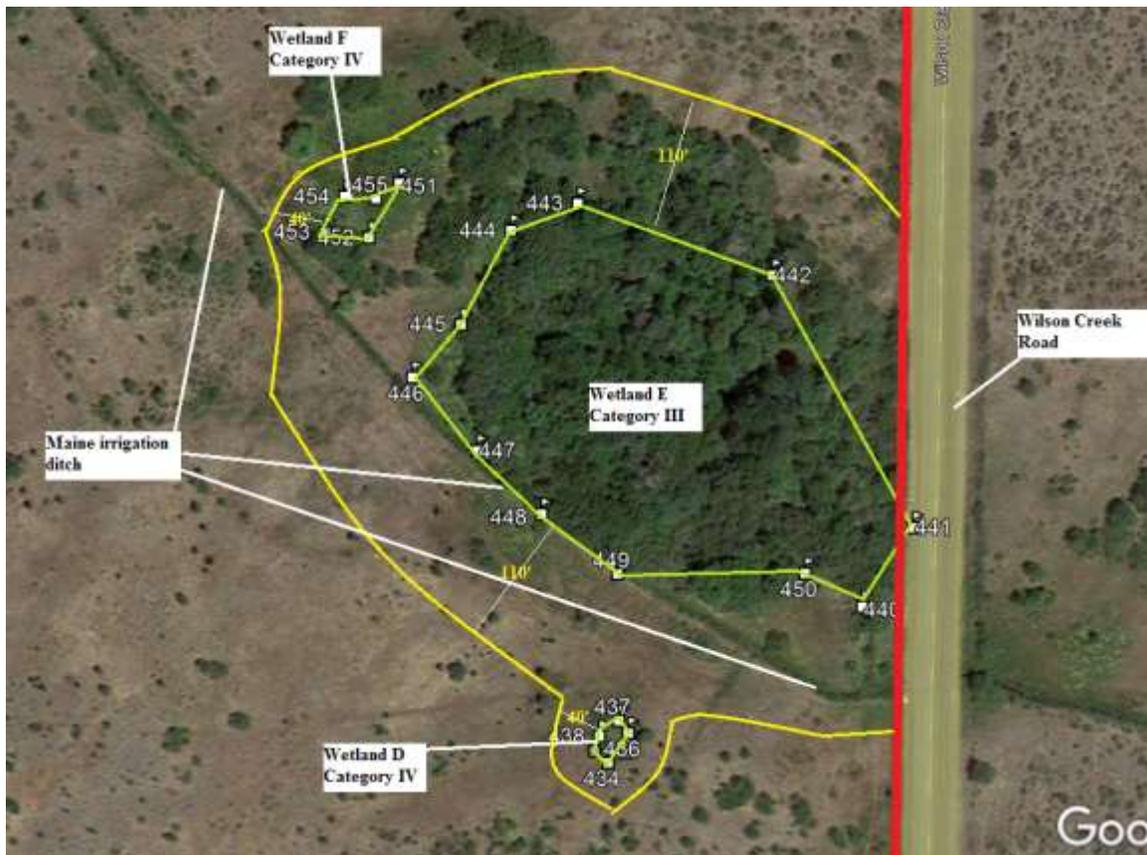


*Above: Wetland B, Below Wetland C*



## **Wetland E**

Wetland E is a forested and scrub-shrub wetland located on the northeast corner of the site. This wetland has several irrigation ditches located along its perimeter and its likely influenced by this irrigation water.



*Above: Wetlands D, E & F on northeast corner of site.*

Wetland E was flagged with pink wetland flags labeled E1-E11 (gps points 440-450).

This wetland contains small aspens, crabapple, willows and a mix of hawthorne and red-osier dogwood. Understory species include sedge, tall fescue, Baltic rush and rose.

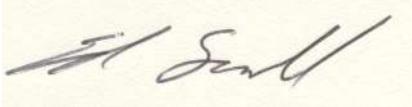
Soil pits excavated within this wetland area revealed a cobbly loam with a soil color of 10YR 2/1 with common, medium, distinct, redoximorphic

concentrations. Soils saturated at the surface during our non-growing season observation of the wetland.

Using the 2014 Washington State Department of Ecology Washington State *Wetland Rating System for Eastern Washington, 2014 Update* dated June 2014 Publication No. 14-06-018, and rating this wetland as a “depressional” wetland, this wetland scored a total of 17 points with 7 for habitat. This indicates a Category III wetland. According to Kittitas County Municipal Code Table 17A.070.030, Category III wetlands with a moderate land use have a 110’ buffer measured from the wetland edge.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at [esewall@sewallwc.com](mailto:esewall@sewallwc.com) .

Sincerely,  
*Sewall Wetland Consulting, Inc.*

A handwritten signature in black ink on a light yellow background, appearing to read 'Ed Sewall'.

Ed Sewall  
Senior Wetlands Ecologist PWS #212

Attached: Data sheets & Rating Forms

## **REFERENCES**

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Kittitas County Municipal Code

Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1



## Priority Habitats and Species on the Web

Report Date: 03/11/2022

### PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Mule deer	N/A	N/A	No
Eastside Steppe	N/A	N/A	No
Golden eagle	N/A	Candidate	Yes
Northern Spotted Owl	Threatened	Endangered	Yes

### PHS Species/Habitats Details:

Mule deer	
Scientific Name	<i>Odocoileus hemionus hemionus</i>
Priority Area	Regular Concentration
Site Name	ELLENSBURG MULE DEER WINTER RANGE
Accuracy	1/4 mile (Quarter Section)
Notes	MULE DEER WINTER RANGE-ELLENSBURG, POLYGON IS 90% OF HERD WINTER RANGE
Source Record	901251
Source Dataset	PHSREGION
Source Name	MUSSER, JOHN
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	<a href="http://wdfw.wa.gov/publications/pub.php?id=00612">http://wdfw.wa.gov/publications/pub.php?id=00612</a>
Geometry Type	Polygons

Eastside Steppe	
Priority Area	Habitat Feature
Site Name	Kittitas County
Accuracy	NA
Notes	EVT: Columbia Plateau Steppe and Grassland State Conservation Rank: S2 (Imperiled). ESOC: Yes.# SGCN Associated (Closely/Generally): 9/23. Climate Vulnerability: Low-Mod.
Source Record	920593
Source Name	Terry Johnson, WDFW
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
Geometry Type	Polygons

Golden eagle	
Scientific Name	<i>Aquila chrysaetos</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
Management Recommendations	<a href="http://wdfw.wa.gov/publications/pub.php?id=00026">http://wdfw.wa.gov/publications/pub.php?id=00026</a>

Northern Spotted Owl	
Scientific Name	<i>Strix occidentalis</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	Threatened
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
Management Recommendations	<a href="http://wdfw.wa.gov/publications/pub.php?id=00026">http://wdfw.wa.gov/publications/pub.php?id=00026</a>

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.

upland near wetland

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: KZ Freehold City/County: Kittitas Sampling Date: 2-17-22
Applicant/Owner: State: WA Sampling Point: DPK1
Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: varved NWI classification:

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

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

Hydrophytic Vegetation Present? Yes No [checked]
Hydric Soil Present? Yes No [checked]
Wetland Hydrology Present? Yes No [checked]
Is the Sampled Area within a Wetland? Yes No [checked]
Remarks:

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.
4.
5. = Total Cover
Herb Stratum (Plot size: )
1. Bromus tectorum 60 UPL
2.
3.
4.
5.
6.
7.
8. = Total Cover
Woody Vine Stratum (Plot size: )
1.
2. = Total Cover
% Bare Ground in Herb Stratum % Cover of Biotic Crust
Remarks:

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (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 x 4 =
UPL species x 5 =
Column Totals: (A) (B)
Prevalence Index = B/A =
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)
^1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes No [checked]

**SOIL**

Sampling Point: DP-7

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
16	10YR 3/3						g2L w/ cobbles	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 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)		

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes \_\_\_\_\_ No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<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

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

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

*met A*

Project/Site: KZ Freehold City/County: Kittitas Sampling Date: 2-17-22  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP #2  
 Investigator(s): Ed Sewall Section, Township, Range: S31 T14N R19E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	
Remarks:			

**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>3</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>100</u> (A/B)	
4. _____	_____	_____	_____		
_____ = Total Cover				<b>Prevalence Index worksheet:</b>	
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				Total % Cover of: _____ Multiply by: _____	
1. _____	_____	_____	_____	OBL species _____ x 1 = _____	
2. _____	_____	_____	_____	FACW species _____ x 2 = _____	
3. _____	_____	_____	_____	FAC species _____ x 3 = _____	
4. _____	_____	_____	_____	FACU species _____ x 4 = _____	
5. _____	_____	_____	_____	UPL species _____ x 5 = _____	
_____ = Total Cover				Column Totals: _____ (A) _____ (B)	
<b>Herb Stratum (Plot size: _____)</b>				Prevalence Index = B/A = _____	
1. <u>Carex spp</u>	<u>60</u>		<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
2. <u>Juncus effusus</u>	<u>20</u>		<u>FACW</u>		
3. <u>Juncus balticus</u>	<u>20</u>		<u>FACW</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____					
Remarks:					

**SOIL**

Sampling Point: DPTZ

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
16	10YR 2/1		common red, distinct				clayey tan	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- 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 Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- 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? Yes  No  Depth (inches): 0"

Wetland Hydrology Present? Yes  No

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

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

*Wet B*

Project/Site: K2 Freehold City/County: Kittitas Sampling Date: 2-17-22

Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP# 3

Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks: \_\_\_\_\_

**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)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</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 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
				Column Totals: _____ (A)	_____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>Carex spp</u>	<u>60</u>		<u>FACW</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
2. <u>Juncus balticus</u>	<u>40</u>		<u>FACW</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks: \_\_\_\_\_



**WETLAND DETERMINATION DATA FORM – Arid West Region**

UPL near wetlands

Project/Site: KZ Freehold City/County: Kittitas Sampling Date: 2-17-22

Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP#4

Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:

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

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: _____)	1. _____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)	1. <u>Bromus tectorum</u> <u>60</u> <u>UPL</u>	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Remarks:
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	1. _____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		



**WETLAND DETERMINATION DATA FORM – Arid West Region**

*Wetland C*

Project/Site: K2 Freehold City/County: Kittitas Sampling Date: 2-17-22  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP#5  
 Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <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:	

**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>3</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>100</u> (A/B)														
4. _____	_____	_____	_____	Prevalence Index worksheet:														
= Total Cover					<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">Total % Cover of:</td> <td style="width:40%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
= Total Cover				Prevalence Index = B/A = _____														
= Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
= Total Cover					<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.													
= Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____														
= Total Cover																		
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Remarks:														

**SOIL**

Sampling Point: DP#5

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
6	10YR2/2						supr muck	
14	10YR2/1		FFF				cobbly dm	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- 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 Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- 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? Yes  No  Depth (inches): 0"  
 (includes capillary fringe)

Wetland Hydrology Present? Yes  No

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

Remarks:

met D

### WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: K2 Freehold City/County: Kittitas Sampling Date: 3-4-22  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP#6  
 Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	
Remarks:			

#### 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>3</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>100</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
_____ = Total Cover				Total % Cover of: _____ Multiply by: _____	
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____ x 1 = _____	
1. _____	_____	_____	_____	FACW species _____ x 2 = _____	
2. _____	_____	_____	_____	FAC species _____ x 3 = _____	
3. _____	_____	_____	_____	FACU species _____ x 4 = _____	
4. _____	_____	_____	_____	UPL species _____ x 5 = _____	
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)	
_____ = Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>Lox spp.</u>	<u>60</u>		<u>FACW</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
2. <u>Burrippa spp.</u>	<u>20</u>		<u>OBL</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. <u>Juncus bulbosus</u>	<u>20</u>		<u>FACW</u>	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____			
Remarks:					



**WETLAND DETERMINATION DATA FORM – Arid West Region**

*upl in wet E*

Project/Site: KZ Freehold City/County: Kittitas Sampling Date: 3-4-27  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DPE7  
 Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <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:	

**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>1</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 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Bromus tectorum</u>	<u>70</u>		<u>upl</u>	___ Dominance Test is >50%
2. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 <sup>1</sup>
3. _____	_____	_____	_____	___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
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**

Sampling Point: DP# 7

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
16	10YR 3/3						gsl	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 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)		

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (Inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

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

Wetland Hydrology Present? Yes \_\_\_\_\_ No

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

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

wetland E

Project/Site: K2 Freehold City/County: Kittitas Sampling Date: 3-4-22  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: D#8  
 Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes _____	No _____	
Remarks:			

**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)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</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 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
				Column Totals: _____ (A) _____ (B)	
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>Carex spp</u>	<u>50</u>		<u>FACW</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
2. <u>Festuca spp</u>	<u>50</u>		<u>FAC</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:

**SOIL**

Sampling Point: DP8

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
16	10M 2/11		Few Fin Fe1				Clay lam	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- 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 Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- 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? Yes  No  Depth (inches): 0'  
 (includes capillary fringe)

Wetland Hydrology Present? Yes  No

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

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

*wetland F*

Project/Site: K2 Freehold City/County: Kittitas Sampling Date: 3-4-27  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: DP #9  
 Investigator(s): Ed Sewall Section, Township, Range: S31 T19N R19E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: various 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? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

**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)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	= Total Cover
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____)				
1. <u>Carex spp</u>	<u>80</u>	<u>FACU</u>	<u>FACU</u>	
2. <u>Juncus effrus</u>	<u>20</u>	<u>FACU</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
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 <input checked="" type="checkbox"/> No _____				

Remarks:

**SOIL**

Sampling Point: DP#9

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
3	10YR3/2						Supric muck	
16	10YR2/1		Few Fin	Faint			clay lean	

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**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): 0"  
 (includes capillary fringe)

Wetland Hydrology Present? Yes  No

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

Remarks:

Wetland name or number A

**RATING SUMMARY – Eastern Washington**

Name of wetland (or ID #): KZ - wet A Date of site visit: 3/22  
 Rated by Ed Small Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class Used for Rating Depress Unit 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 \_\_\_\_\_

**OVERALL WETLAND CATEGORY** III

**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	
	Circle the appropriate ratings					
Site Potential	H	M	L	H	M	L
Landscape Potential	H	M	L	H	M	L
Value	H	M	L	H	M	L
Score Based on Ratings	4		5		7	

16

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

CHARACTERISTIC	CATEGORY	
	Circle the appropriate category	
Vernal Pools	II	III
Alkalali	I	
Wetland with high conservation value	I	
Bog	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		

D

Wetland name or number A

**Maps and figures required to answer questions correctly (Eastern Washington)**

**Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D1.4	
Boundary of 150 ft buffer (can be added to another figure)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (can be added to map of hydroperiods)	H1.3.1	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

**Lake-fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L 2.2	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number A

## HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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

1. Does the entire wetland unit **meet both** of the following criteria?
  - The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size
  - At least 30% of the open water area is deeper than 10 ft (3 m)
  - NO - go to 2     YES - The wetland class is **Lake-fringe (Lacustrine Fringe)**
2. Does the entire wetland unit **meet all** of the following criteria?
  - The wetland is on a slope (*slope can be very gradual*),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - Does the water leaves the wetland **without being impounded**?

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

- NO - go to 3     YES - The wetland class is **Slope**
3. Does the entire wetland unit **meet all** of the following criteria?
  - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river
  - The overbank flooding occurs at least once every ten years.

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

- NO - go to 4     YES - The wetland class is **Riverine**
4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*
  - NO - go to 5     YES - The wetland class is **Depressional**
5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM

Wetland name or number A

classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

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

Wetland name or number A

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

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

D 2.0 Does the landscape have the potential to support the water quality function at the site?		
D2.1 Does the Wetland unit receive stormwater discharges? Yes = 1 No = 0		
D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants? Yes = 1 No = 0		
D2.3 Are there are septic systems within 250 ft of the wetland unit? Yes = 1 No = 0		
D2.4 Are there are other sources of pollutants coming into the wetland that are not listed in questions D2.1 - D2.3? Source Yes = 1 No = 0		
Total for D 2		1

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

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D3.1 Does the unit discharge directly (within 1 mile) to a stream, river, or lake that is on the 303d list? Yes = 1 No = 0		
D 3.2 Is the unit in a basin or sub-basin where water quality is an issue in some aquatic resource (303d list, eutrophic lakes, problems with nuisance and toxic algae)? Yes = 1 No = 0		
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage or basin in which unit is found) Yes = 1 No = 0		
Total for D 3		1

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

Wetland name or number A

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

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

D 5.0 Does the landscape have the potential to support hydrologic functions at the site?		
D5.1 Does the unit receive any stormwater discharges? Yes = 1 No = 0		
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates runoff? Yes = 1 No = 0		
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with intensive human land uses? Yes = 1 No = 0		
Total for D 5		1

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

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
<input type="checkbox"/> The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g. salmon redds), AND <ul style="list-style-type: none"> <li><input type="checkbox"/> Damage occurs in sub-basin that is immediately downgradient of unit</li> <li><input type="checkbox"/> Damage occurs in a sub-basin further down-gradient</li> </ul>		
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <p>Explain why _____ points = 0</p>		
<input type="checkbox"/> There are no problems with flooding downstream of the unit. points = 0		
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0		
Total for D 6		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 A

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type	Category
<p>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</p> <p><b>SC 1.0 Vernal pools</b> Is the wetland unit less than 4000 ft<sup>2</sup>, and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <li>Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input</li> <li>Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool</li> <li>The soil in the wetland are shallow (&lt;1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay.</li> <li>Surface water is present for less than 120 days during the "wet" season.</li> </ul> <p>YES = Go to SC 1.1      NO - not a vernal pool</p> <p>SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2      NO - not a vernal pool with special characteristics</p>	
<p>SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II      NO = Category III</p>	<p>Cat. II Cat. III</p>
<p><b>SC 2.0 Alkali wetlands</b> Does the wetland unit meets one of the following two criteria?</p> <ul style="list-style-type: none"> <li>The wetland has a conductivity &gt; 3.0 mS/cm.</li> <li>The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li>If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p>OR does the wetland unit meets two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>Salt encrustations around more than 80% of the edge of the wetland</li> <li>More than ¾ of the plant cover consists of species listed on Table 4</li> <li>A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p>YES = Category I      NO - not an alkali wetland</p>	<p>Cat. I</p>

Wetland name or number A

<p><b>SC 3.0 Wetlands with High Conservation Value (WHCV)</b></p> <p>SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value? YES - Go to SC 2.2      NO - Go to SC 2.3</p> <p>SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I      NO = not a WHCV</p> <p>SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhwetlands.pdf</a> YES - contact WNHP/DNR and go to SC 2.4      NO = not a WHCV</p> <p>SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site? YES = Category I      NO = not an WHCV</p>	<p>Cat. I</p>
<p><b>SC 4.0 Bogs and Calcareous Fens</b> Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</p> <p>SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils?) Yes - go to SC 4.3      NO - go to SC 4.2</p> <p>SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?? Yes - go to SC 4.3      No - Is not a bog for rating</p> <p>SC 4.3. Does an area within the unit have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes - Category I bog      No - go to SC 4.4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4 Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy Yes - Category I bog      NO - go to question SC 4.5</p> <p>5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes - Is a Calcareous Fen for purpose of rating      No - go to Question 6</p> <p>6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met:</p> <ul style="list-style-type: none"> <li>Marl deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant stems</li> <li>The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland</li> </ul> <p>Yes - Is a Category I calcareous fen      No - Is not a calcareous fen</p>	<p>Cat. I</p>

Wetland name or number A

<p><b>SC 5.0 Forested Wetlands</b> Does the wetland unit have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified a forested class is present in question H 1.1.)</p> <ul style="list-style-type: none"> <li>The wetland is within the "100 year" floodplain of a river or stream</li> <li>aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> </ul> <p>— There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) YES = go to SC 5.1 NO = not a forested wetland with special characteristics</p>	
<p>SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7) YES = Category I NO = go to SC 5.2</p>	Cat. I
<p>SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3</p>	Cat. I
<p>SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (see Table 7) YES = Category II NO = go to SC 5.5</p>	Cat. II
<p>SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II</p>	Cat. II
<p><b>Category of wetland based on Special Characteristics</b> Choose the "highest" rating if wetland falls into several categories. If you answered NO for all types enter "Not Applicable" on p.1</p>	NA

Wetland name or number A

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> )

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

\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

\_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).

\_\_\_ **Old-growth/Mature forests: Old-growth east of Cascade crest:** Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests:** Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.

\_\_\_ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).

\_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

\_\_\_ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.

\_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

\_\_\_ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

\_\_\_ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho Fescue (*Festuca idahoensis*), Sandberg Bluegrass (*Poa secunda*), Rough Fescue (*F. campestris*), or needlegrass (*Achnatherum* spp.).

\_\_\_ **Juniper Savannah:** All juniper woodlands.

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

Wetland name or number \_\_\_\_\_

### RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): KZ-wet B Date of site visit: 3/22  
 Rated by El Scott Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class Used for Rating slope Unit 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 \_\_\_\_\_

### OVERALL WETLAND CATEGORY IV

#### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat		
	H	M	L	H	M	L	H	M	L
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
Score Based on Ratings	<u>4</u>			<u>5</u>			<u>6</u>		

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

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

CHARACTERISTIC	CATEGORY	
	Circle the appropriate category	
Vernal Pools	<u>II</u>	III
Alkali		I
Wetland with high conservation value		I
Bog		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 B

### Maps and figures required to answer questions correctly (Eastern Washington)

#### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 1.4	
Boundary of 150 ft buffer (can be added to another figure)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (can be added to map of hydroperiods)	H 1.3.1	

#### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

#### Lake-fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L 2.2	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

#### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number B

## HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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

1. Does the entire wetland unit **meet both** of the following criteria?  
 The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size  
At least 30% of the open water area is deeper than 10 ft (3 m)  
NO - go to 2    YES - The wetland class is **Lake-fringe (Lacustrine Fringe)**
2. Does the entire wetland unit **meet all** of the following criteria?  
 The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
 Does the water leaves the wetland **without being impounded**?  
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).  
NO - go to 3    YES - The wetland class is **Slope**
3. Does the entire wetland unit **meet all** of the following criteria?  
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river  
 The overbank flooding occurs at least once every ten years.  
NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.  
NO - go to 4    YES - The wetland class is **Riverine**
4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*  
NO - go to 5    YES - The wetland class is **Depressional**
5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM

Wetland name or number B

classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

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

Wetland name or number B

SLOPE WETLANDS		Points (only 1 score per box)
<b>Water Quality Functions</b> - Indicators that the site functions to improve water quality		
S 1. Does the wetland unit have the <u>potential</u> to improve water quality?		
S 1.1 Characteristics of average slope of unit: (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)		
Slope is 1% or less	points = 3	2
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	YES = 3 points NO = 0 points	0
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense plants means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	0
Dense, uncut, herbaceous plants > 1/2 of area	points = 3	
Dense, woody, plants > 1/4 of area	points = 2	
Dense, uncut, herbaceous plants > 1/4 of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	2

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

S 2.0 Does the landscape have the potential to improve water quality at the site?		
S 2.1 Is >10% of the buffer area within 150 ft upslope of wetland unit land uses that generate pollutants	Yes = 1 No = 0	0
S 2.2 Are there other sources of pollutants coming into the wetland that are not listed in questions S 2.1?	Yes = 1 No = 0	0
Total for S 2	Add the points in the boxes above	0

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

S 3.0 Is the water quality improvement provided by the site valuable to society?		
S 3.1 Does the unit discharge directly to a stream, river, or lake that is on the 303d list?	Yes = 1 No = 0	0
S 3.2 Is the unit in a sub-basin where water quality is an issue? (at least one aquatic resource in the basin is on the 303(d) list)?	Yes = 1 No = 0	0
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?	Yes = 2 No = 0	0
Total for D 3	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 B

SLOPE WETLANDS		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and stream erosion		
S 4.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?		
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows)	Dense, uncut, rigid plants covers > 90% of the area of the wetland. All other conditions = 0	YES = 3 1

**Rating of Site Potential** If score is: 1 = M 0 = L  
Record the rating on the first page

S 5.0 Does the landscape have the potential to support the hydrologic functions at the site?		
S 5.1 Is more than 25% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban?	Yes = 1 No = 0	1

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

S 6.0 Are the hydrologic functions provided by the site valuable to society?		
S 6.1 Distance to the nearest areas downstream that have flooding problems	The sub-basin immediately down-gradient of site has surface flooding problems that results in damage to human or natural resources Surface flooding problems are in a sub-basin further down-gradient No flooding problems anywhere downstream	points = 2 points = 1 points = 0 0
S 6.2 Has the site has been identified as important for flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for S 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

NOTES and FIELD OBSERVATIONS:



Wetland name or number B

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type	Category
<p><i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i></p> <p><b>SC 1.0 Vernal pools</b> Is the wetland unit less than 4000 ft<sup>2</sup>, and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <li>Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input</li> <li>Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool</li> <li>The soil in the wetland are shallow (&lt;1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay.</li> <li>Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - not a vernal pool</li> </ul> <p>SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO - not a vernal pool with special characteristics</p>	
<p>SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III</p>	<p>Cat. II Cat. III</p>
<p><b>SC 2.0 Alkali wetlands</b> Does the wetland unit meets one of the following two criteria?</p> <ul style="list-style-type: none"> <li>The wetland has a conductivity &gt; 3.0 mS/cm.</li> <li>The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li>If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p>OR does the wetland unit meets two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>Salt encrustations around more than 80% of the edge of the wetland</li> <li>More than ¾ of the plant cover consists of species listed on Table 4</li> <li>A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p>YES = Category I NO - not an alkali wetland</p>	<p>Cat. I</p>

Wetland name or number B

<p><b>SC 3.0 Wetlands with High Conservation Value (WHCV)</b></p> <p>SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value? YES - Go to SC 2.2 NO - Go to SC 2.3</p> <p>SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV</p> <p>SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wrhwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wrhwetlands.pdf</a> YES - contact WNHP/DNR and go to SC 2.4 NO = not a WHCV</p> <p>SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site? YES = Category I NO = not an WHCV</p>	<p>Cat. I</p>
<p><b>SC 4.0 Bogs and Calcareous Fens</b> Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</p> <p>SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils?) Yes - go to SC 4.3 No - go to SC 4.2</p> <p>SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?? Yes - go to SC 4.3 No - Is not a bog for rating</p> <p>SC 4.3. Does an area within the unit have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes - Category I bog No - go to SC 4.4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4 Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy Yes - Category I bog NO - go to question SC 4.5</p> <p>5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes - Is a Calcareous Fen for purpose of rating No - go to Question 6</p> <p>6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met:</p> <ul style="list-style-type: none"> <li>Marl deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant stems</li> <li>The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland</li> </ul> <p>Yes - Is a Category I calcareous fen No - Is not a calcareous fen</p>	<p>Cat. I</p>

Wetland name or number B

<p><b>SC 5.0 Forested Wetlands</b>          Does the wetland unit have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified a forested class is present in question H 1.1)  <ul style="list-style-type: none"> <li>The wetland is within the "100 year" floodplain of a river or stream</li> <li>aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> </ul>         — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1)          YES = go to SC 5.1 NO = not a forested wetland with special characteristics</p>	
<p>SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees. (see Table 7)          YES = Category I NO = go to SC 5.2</p>	Cat. I
<p>SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species.          YES = Category I NO = go to SC 5.3</p>	Cat. I
<p>SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (see Table 7)          YES = Category II NO = go to SC 5.5</p>	Cat. II
<p>SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?          YES = Category II</p>	Cat. II
<p><b>Category of wetland based on Special Characteristics</b>          Choose the "highest" rating if wetland falls into several categories.          If you answered NO for all types enter "Not Applicable" on p.1</p>	

Wetland name or number \_\_\_\_\_

**Appendix B: WDFW Priority Habitats in Eastern Washington**

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> )

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

- \_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- \_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).
- \_\_\_ **Old-growth/Mature forests: Old-growth east of Cascade crest:** Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests:** Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.
- \_\_\_ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).
- \_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- \_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- \_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- \_\_\_ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.
- \_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- \_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.
- \_\_\_ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- \_\_\_ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho Fescue (*Festuca idahoensis*), Sandberg Bluegrass (*Poa secunda*), Rough Fescue (*F. campestris*), or needlegrass (*Achnatherum* spp.).
- \_\_\_ **Juniper Savannah:** All juniper woodlands.

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

Wetland name or number C

**RATING SUMMARY – Eastern Washington**

Name of wetland (or ID #): RZ Wet C Date of site visit: 3/22  
 Rated by Ecl Samml Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class Used for Rating Deposited Unit has multiple HGM classes?  N

NOTE: Form is not complete without the figures requested (figures can be combined).  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY IV**

**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		
	H	M	L	H	M	L	H	M	L
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
Score Based on Ratings	<u>3</u>			<u>4</u>			<u>7</u>		

14

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

CHARACTERISTIC	CATEGORY	
	Circle the appropriate category	
Vernal Pools	II	III
Alkali	I	
Wetland with high conservation value	I	
Bog	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		<input checked="" type="checkbox"/>

Wetland name or number C

**Maps and figures required to answer questions correctly (Eastern Washington)**

**Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 1.4	
Boundary of 150 ft buffer (can be added to another figure)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (can be added to map of hydroperiods)	H 1.3.1	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Polygon of area 1km from wetland edge -including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

**Lake-fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L 2.2	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number \_\_\_\_\_

## HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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

- Does the entire wetland unit **meet both** of the following criteria?
    - The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size
    - At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**    **YES - The wetland class is Lake-fringe (Lacustrine Fringe)**
  - Does the entire wetland unit **meet all** of the following criteria?
    - The wetland is on a slope (*slope can be very gradual*),
    - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

Does the water leave the wetland **without being impounded**?

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

**NO - go to 3**    **YES - The wetland class is Slope**
  - Does the **entire** wetland unit **meet all** of the following criteria?
    - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river
    - The overbank flooding occurs at least once every ten years.

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

**NO - go to 4**    **YES - The wetland class is Riverine**
  - Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*
- NO - go to 5**    **YES - The wetland class is Depressional**
- Your wetland unit seems to be **difficult to classify** and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. **IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM

Wetland name or number \_\_\_\_\_

classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

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

Wetland name or number C

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality.</b>		
<b>D 1.0 Does the wetland unit have the potential to improve water quality?</b>		
D 1.1 Characteristics of surface water flows out of the wetland unit:		
Wetland has no surface water outlet -	points = 5	3
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing surface outlet	points = 1	
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions of soils)		0
YES points = 3	NO points = 0	
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	points = 5	0
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
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	points = 3	0
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	3

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

<b>D 2.0 Does the landscape have the potential to support the water quality function at the site?</b>		
D2.1 Does the Wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants	Yes = 1 No = 0	0
D2.3 Are there are septic systems within 250 ft of the wetland unit?	Yes = 1 No = 0	0
D2.4 Are there are other sources of pollutants coming into the wetland that are not listed in questions D2.1 - D2.3? 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

<b>D 3.0 Is the water quality improvement provided by the site valuable to society?</b>		
D3.1 Does the unit discharge directly (within 1 mile) to a stream, river, or lake that is on the 303d list?	Yes = 1 No = 0	0
D 3.2 Is the unit in a basin or sub-basin where water quality is an issue in some aquatic resource (303d list, eutrophic lakes, problems with nuisance and toxic algae)?	Yes = 1 No = 0	0
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage or basin in which unit is found)	Yes = 2 No = 0	0
Total for D 3	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

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

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

<b>D 5.0 Does the landscape have the potential to support hydrologic functions at the site?</b>		
D5.1 Does the unit receive any stormwater discharges?	Yes = 1 No = 0	0
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates runoff?	Yes = 1 No = 0	0
D 5.3 Is more than 25% of the contributing basin of the wetland unit 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 1,2 = M 0 = L  
Record the rating on the first page

<b>D 6.0 Are the hydrologic functions provided by the site valuable to society?</b>		
D 6.1 Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
<ul style="list-style-type: none"> <li>I The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g. salmon redds), AND               <ul style="list-style-type: none"> <li>o Damage occurs in sub-basin that is immediately downgradient of unit</li> <li>o Damage occurs in a sub-basin further down-gradient</li> </ul> </li> <li>II 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.</li> </ul>	points = 2 points = 1	?
Explain why _____	points = 0	
<ul style="list-style-type: none"> <li>III There are no problems with flooding downstream of the unit.</li> </ul>	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	1

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



Wetland name or number C

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category.  
**NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.**

Wetland Type	Category
<p><b>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</b></p> <p><b>SC 1.0 Vernal pools</b>                      Is the wetland unit less than 4000 ft<sup>2</sup>, and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool</i></li> <li>— The soil in the wetland are shallow (&lt;1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the "wet" season.</li> </ul> <p>YES = Go to SC 1.1      NO <u>not a vernal pool</u></p> <p>SC 1.1 Is the vernal pool relatively undisturbed in February and March?                      YES = Go to SC 1.2      NO – not a vernal pool with special characteristics</p>	
<p>SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)?                      YES = Category II      NO = Category III</p>	<p>Cat. II Cat. III</p>
<p><b>SC 2.0 Alkali wetlands</b>                      Does the wetland unit meets one of the following two criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity &gt; 3.0 mS/cm.</li> <li>— The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meets two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 80% of the edge of the wetland</li> <li>— More than ¾ of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p>YES = Category I      NO – not an alkali wetland</p>	<p>Cat. I</p>

Wetland name or number C

<p><b>SC 3.0 Wetlands with High Conservation Value (WHCV)</b></p> <p>SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value?                      YES - Go to SC 2.2      NO – Go to SC 2.3</p> <p>SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value?    YES = Category I      NO = not a WHCV</p> <p>SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wmhovwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wmhovwetlands.pdf</a>                      YES ___ – contact WNH/DNR and go to SC 2.4      NO = not a WHCV</p> <p>SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site?                      YES = Category I      NO ___ not an WHCV</p>	<p>Cat. I</p>
<p><b>SC 4.0 Bogs and Calcareous Fens</b>                      Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</p> <p>SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils?)                      Yes - go to SC 4.3      No - go to SC 4.2</p> <p>SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                      Yes - go to SC 4.3      No - Is not a bog for rating</p> <p>SC 4.3. Does an area within the unit have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                      Yes – Category I bog      No - go to SC 4.4</p> <p><i>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</i></p> <p>SC 4.4 Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy                      Yes – Category I bog      NO – go to question SC 4.5</p> <p>5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                      Yes – Is a Calcareous Fen for purpose of rating      No - go to Question 6</p> <p>6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met:</p> <ul style="list-style-type: none"> <li>• Marl deposits (calcium carbonate (CaCO<sub>3</sub>) precipitate) occur on the soil surface or plant stems</li> <li>• The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland</li> </ul> <p>Yes – Is a Category I calcareous fen      No - Is not a calcareous fen</p>	<p>Cat. I</p>

Wetland name or number \_\_\_\_\_

<p><b>SC 5.0 Forested Wetlands</b> Does the wetland unit have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified a forested class is present in question H 1.1)</p> <ul style="list-style-type: none"> <li>The wetland is within the "100 year" floodplain of a river or stream</li> <li>aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> </ul> <p>— There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) YES = go to SC 5.1 <b>NO – not a forested wetland with special characteristics</b></p>	
<p>SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7) YES = Category I NO = go to SC 5.2</p>	Cat. I
<p>SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3</p>	Cat. I
<p>SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (see Table 7) YES = Category II NO = go to SC 5.5</p>	Cat. II
<p>SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II</p>	Cat. II
<p><b>Category of wetland based on Special Characteristics</b> Choose the "highest" rating if wetland falls into several categories. If you answered NO for all types enter "Not Applicable" on p.1</p>	

NA

Wetland name or number \_\_\_\_\_

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> )

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

\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

\_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).

\_\_\_ **Old-growth/Mature forests: Old-growth east of Cascade crest:** Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests:** Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.

\_\_\_ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).

\_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

\_\_\_ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.

\_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

\_\_\_ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

\_\_\_ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho Fescue (*Festuca idahoensis*), Sandberg Bluegrass (*Poa secunda*), Rough Fescue (*F. campestris*), or needlegrass (*Achnatherum* spp.).

\_\_\_ **Juniper Savannah:** All juniper woodlands.

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

Wetland name or number D

### RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): K2 - Wet D Date of site visit: 3/22  
 Rated by Ed Smith Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class Used for Rating Slope Unit 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 \_\_\_\_\_

### OVERALL WETLAND CATEGORY IV

#### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat		
	H	M	L	H	M	L	H	M	L
Site Potential			(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
Score Based on Ratings	<u>3</u>			<u>5</u>			<u>7</u>		

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

15

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

CHARACTERISTIC	CATEGORY	
	Circle the appropriate category	
	II	III
Vernal Pools		
Alkali		I
Wetland with high conservation value		I
Bog		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	<input checked="" type="checkbox"/>	

Wetland name or number D

### Maps and figures required to answer questions correctly (Eastern Washington)

#### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 1.4	
Boundary of 150 ft buffer (can be added to another figure)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (can be added to map of hydroperiods)	H 1.3.1	

#### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

#### Lake-fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L 2.2	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

#### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H 2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number D

### HGM Classification of Wetland Units in Eastern Washington

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

- Does the entire wetland unit **meet both** of the following criteria?
    - The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size
    - At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**    **YES - The wetland class is Lake-fringe (Lacustrine Fringe)**
  - Does the entire wetland unit **meet all** of the following criteria?
    - The wetland is on a slope (*slope can be very gradual*),
    - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
    - Does the water leaves the wetland **without being impounded**?

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

**NO - go to 3**    **YES - The wetland class is Slope**
  - Does the entire wetland unit **meet all** of the following criteria?
    - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river
    - The overbank flooding occurs at least once every ten years.

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

**NO - go to 4**    **YES - The wetland class is Riverine**
  - Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*
- NO - go to 5**    **YES - The wetland class is Depressional**
5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM

Wetland name or number D

classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

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

Wetland name or number D

SLOPE WETLANDS		Points (only 1 score per box)
<b>Water Quality Functions</b> - Indicators that the site functions to improve water quality		
S 1. Does the wetland unit have the <u>potential</u> to improve water quality?		
S 1.1 Characteristics of average slope of unit: (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) Slope is 1% or less Slope is > 1% - 2% Slope is > 2% - 5% Slope is greater than 5%	points = 3 points = 2 points = 1 points = 0	2
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES = 3 points NO = 0 points	YES = 3 points NO = 0 points	0
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense plants means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.  Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > 1/2 of area Dense, woody, plants > 1/4 of area Dense, uncut, herbaceous plants > 1/4 of area Does not meet any of the criteria above for plants	points = 6 points = 3 points = 2 points = 1 points = 0	3
Total for S 1 Add the points in the boxes above		5
<b>Rating of Site Potential</b> If score is: 12 = H 6 - 11 = M 0 - 5 = L Record the rating on the first page		

S 2. 0 Does the landscape have the potential to improve water quality at the site?		
S 2.1 Is >10% of the buffer area within 150 ft upslope of wetland unit land uses that generate pollutants Yes = 1 No = 0	Yes = 1 No = 0	0
S 2.2 Are there other sources of pollutants coming into the wetland that are not listed in questions S 2.1? Yes = 1 No = 0	Yes = 1 No = 0	0
Total for S 2 Add the points in the boxes above		0
<b>Rating of Landscape Potential</b> If score is: 1 - 2 = M 0 = L Record the rating on the first page		

S 3.0 Is the water quality improvement provided by the site valuable to society?		
S 3.1 Does the unit discharge directly to a stream, river, or lake that is on the 303d list? Yes = 1 No = 0	Yes = 1 No = 0	0
S 3.2 Is the unit in a sub-basin where water quality is an issue? (at least one aquatic resource in the basin is on the 303(d) list)? Yes = 1 No = 0	Yes = 1 No = 0	0
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		0
<b>Rating of Value</b> If score is: 2 - 4 = H 1 = M 0 = L Record the rating on the first page		

Wetland name or number D

SLOPE WETLANDS		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and stream erosion		
S 4.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?		
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid plants covers > 90% of the area of the wetland. All other conditions = 0	YES = 1 All other conditions = 0	1
<b>Rating of Site Potential</b> If score is: 1 = M 0 = L Record the rating on the first page		
S 5.0 Does the landscape have the potential to support the hydrologic functions at the site?		
S 5.1 Is more than 25% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	Yes = 1 No = 0	0
<b>Rating of Landscape Potential</b> If score is: 1 = M 0 = L Record the rating on the first page		
S 6.0 Are the hydrologic functions provided by the site valuable to society?		
S 6.1 Distance to the nearest areas downstream that have flooding problems The sub-basin immediately down-gradient of site has surface flooding problems that results in damage to human or natural resources Surface flooding problems are in a sub-basin further down-gradient No flooding problems anywhere downstream	points = 2 points = 1 points = 0	1
S 6.2 Has the site has been identified as important for flood conveyance in a regional flood control plan? Yes = 2 No = 0	Yes = 2 No = 0	0
Total for S 6 Add the points in the boxes above		1
<b>Rating of Value</b> If score is: 2 - 4 = H 1 = M 0 = L Record the rating on the first page		

NOTES and FIELD OBSERVATIONS:



Wetland name or number D

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category.  
 NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type	Category
<p><b>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</b></p> <p><b>SC 1.0 Vernal pools</b>            Is the wetland unit less than 4000 ft<sup>2</sup>, and does it meet at least two of the following criteria?            — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input            — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool            — The soil in the wetland are shallow (&lt;1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay.            — Surface water is present for less than 120 days during the "wet" season.            YES = Go to SC 1.1 NO - not a vernal pool            SC 1.1 Is the vernal pool relatively undisturbed in February and March?            YES = Go to SC 1.2 NO - not a vernal pool with special characteristics</p>	
<p>SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)?            YES = Category II NO = Category III</p>	<p>Cat. II Cat. III</p>
<p><b>SC 2.0 Alkali wetlands</b>            Does the wetland unit meets one of the following two criteria?            — The wetland has a conductivity &gt; 3.0 mS/cm.            — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).            — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meets two of the following three sub-criteria?            — Salt encrustations around more than 80% of the edge of the wetland            — More than 3/4 of the plant cover consists of species listed on Table 4            — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.            YES = Category I NO - not an alkali wetland</p>	<p>Cat. I</p>

Wetland name or number D

<p><b>SC 3.0 Wetlands with High Conservation Value (WHCV)</b></p> <p>SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value?            YES - Go to SC 2.2 NO - Go to SC 2.3            SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV            SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhp/wetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhp/wetlands.pdf</a>            YES - contact WNHP/DNR and go to SC 2.4 NO = not a WHCV            SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site?            YES = Category I NO - not a WHCV</p>	<p>Cat. I</p>
<p><b>SC 4.0 Bogs and Calcareous Fens</b>            Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.            SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)?            Yes - go to SC 4.3 NO - go to SC 4.2            SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond??            Yes - go to SC 4.3 NO - Is not a bog for rating            SC 4.3. Does an area within the unit have more than 70% cover of masses at ground level AND at least 30% of the total plant cover consists of species in Table 5?            Yes - Category I bog No - go to SC 4.4            NOTE: If you are uncertain about the extent of masses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.            SC 4.4 Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy            Yes - Category I bog NO - go to question SC 4.5            5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?            Yes - Is a Calcareous Fen for purpose of rating NO - go to Question 6            6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met:            • Marl deposits (calcium carbonate (CaCO<sub>3</sub>) precipitate) occur on the soil surface or plant stems            • The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland            Yes - Is a Category I calcareous fen NO - Is not a calcareous fen</p>	<p>Cat. I</p>

Wetland name or number D

<p><b>SC 5.0 Forested Wetlands</b>          Does the wetland unit have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified a forested class is present in question H 1.1)</p> <ul style="list-style-type: none"> <li>The wetland is within the "100 year" floodplain of a river or stream</li> <li>aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> </ul> <p>— There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1)</p> <p>YES = go to SC 5.1 NO = <u>not a forested wetland with special characteristics</u></p>		
<p>SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)</p> <p>YES = Category I NO = go to SC 5.2</p>	Cat. I	
<p>SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species.</p> <p>YES = Category I NO = go to SC 5.3</p>	Cat. I	
<p>SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (see Table 7)</p> <p>YES = Category II NO = go to SC 5.5</p>	Cat. II	
<p>SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?</p> <p>YES = Category II</p>	Cat. II	
<p><b>Category of wetland based on Special Characteristics</b>          Choose the "highest" rating if wetland falls into several categories.          If you answered NO for all types enter "Not Applicable" on p.1</p>		NA

Wetland name or number D

### Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> )

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

- \_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- \_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).
- \_\_\_ **Old-growth/Mature forests:** Old-growth east of Cascade crest: Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.
- \_\_\_ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).
- \_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- \_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- \_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- \_\_\_ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.
- \_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- \_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.
- \_\_\_ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- \_\_\_ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho Fescue (*Festuca idahoensis*), Sandberg Bluegrass (*Poa secunda*), Rough Fescue (*F. campestris*), or needlegrass (*Achnatherum* spp.).
- \_\_\_ **Juniper Savannah:** All juniper woodlands.

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

Wetland name or number E

**RATING SUMMARY – Eastern Washington**

Name of wetland (or ID #): KZ Wet E Date of site visit: 3/22  
 Rated by Ed Smith Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class Used for Rating Depress Unit 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 \_\_\_\_\_

**OVERALL WETLAND CATEGORY III**

**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		
	H	M	L	H	M	L	H	M	L
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
Score Based on Ratings	5			5			7		

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

CHARACTERISTIC	CATEGORY	
	Circle the appropriate category	
	II	III
Vernal Pools		
Alkali		I
Wetland with high conservation value		I
Bog		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 E

**Maps and figures required to answer questions correctly (Eastern Washington)**

**Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D1.4	
Boundary of 150 ft buffer (can be added to another figure)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (can be added to map of hydroperiods)	H1.3.1	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

**Lake-fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L 2.2	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number E

## HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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

1. Does the entire wetland unit **meet both** of the following criteria?  
 The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)  
**NO - go to 2**    **YES - The wetland class is Lake-fringe (Lacustrine Fringe)**
2. Does the entire wetland unit **meet all** of the following criteria?  
 The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
 Does the water leave the wetland **without being impounded**?  
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually 3ft diameter and less than 1 foot deep).  
**NO - go to 3**    **YES - The wetland class is Slope**
3. Does the entire wetland unit **meet all** of the following criteria?  
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river  
 The overbank flooding occurs at least once every ten years.  
NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.  
**NO - go to 4**    **YES - The wetland class is Riverine**
4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*  
**NO - go to 5**    **YES - The wetland class is Depressional**
5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM

Wetland name or number E

classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

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

Wetland name or number E

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
<b>Water Quality Functions</b> - indicators that the site functions to improve water quality.		
D 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?		
D 1.1 Characteristics of surface water flows out of the wetland unit:		
Wetland has no surface water outlet	points = 5	3
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing surface outlet	points = 1	
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions of soils)		
YES points = 3	NO points = 0	0
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	points = 5	5
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
D 1.4 Characteristics of seasonal ponding or inundation.)		
This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.		
Area seasonally ponded is > 1/2 total area of wetland	points = 3	0
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	8
<b>Rating of Site Potential</b> 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 at the site?		
D2.1 Does the Wetland unit receive stormwater discharges?		
Yes = 1 No = 0		1
D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants		
Yes = 1 No = 0		1
D2.3 Are there are septic systems within 250 ft of the wetland unit?		
Yes = 1 No = 0		0
D2.4 Are there are other sources of pollutants coming into the wetland that are not listed in questions		
D2.1 - D2.3? Source		
Yes = 1 No = 0		0
Total for D 2	Add the points in the boxes above	2
<b>Rating of Landscape Potential</b> 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?		
D3.1 Does the unit discharge directly (within 1 mile) to a stream, river, or lake that is on the 303d list?		
Yes = 1 (No = 0)		0
D 3.2 Is the unit in a basin or sub-basin where water quality is an issue in some aquatic resource (303d list, eutrophic lakes, problems with nuisance and toxic algae)?		
Yes = 1 (No = 0)		0
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage or basin in which unit is found)		
Yes = 2 (No = 0)		0
Total for D 3	Add the points in the boxes above	0
<b>Rating of Value</b> If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page		

Wetland name or number E

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
<b>Hydrologic Functions</b> - indicators that the site functions to reduce flooding and stream erosion.		
D 4.0 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		
D 4.1 Characteristics of surface water flows out of the wetland unit:		
Wetland has no surface water outlet	points = 8	4
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing surface outlet (if outlet is a ditch and not permanently flowing treat unit as "intermittently flowing")	points = 0	
D 4.2 Depth of storage during wet periods Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).		
Seasonal ponding: >= 3 ft above the lowest point in unit or the surface of permanent ponding	points = 8	0
Seasonal ponding: 2 ft - < 3 ft above the lowest point in unit 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 unit has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	4
<b>Rating of Site Potential</b> 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 hydrologic functions at the site?		
D5.1 Does the unit receive any stormwater discharges?		
Yes = 1 No = 0		1
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates runoff?		
Yes = 1 No = 0		1
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with intensive human land uses?		
Yes = 1 (No = 0)		0
Total for D 5	Add the points in the boxes above	2
<b>Rating of Landscape Potential</b> If score is: 3 = H 1, 2 = M 0 = L Record the rating on the first page		

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the unit in a landscape that has flooding problems?		
Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
<input type="checkbox"/> The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g. salmon redds), AND		
<input type="checkbox"/> Damage occurs in sub-basin that is immediately downgradient of unit		
<input type="checkbox"/> Damage occurs in a sub-basin further down-gradient		
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
Explain why _____		
points = 0		
<input type="checkbox"/> There are no problems with flooding downstream of the unit.		
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
<b>Rating of Value</b> If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page		





Wetland name or number   E  

<p><b>SC 5.0 Forested Wetlands</b> Does the wetland unit have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified a forested class is present in question H 1.1)</p> <ul style="list-style-type: none"> <li>The wetland is within the "100 year" floodplain of a river or stream</li> <li>aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1)</li> </ul> <p>YES = go to SC 5.1    NO = not a forested wetland with special characteristics</p>	
<p>SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)</p> <p>YES = Category I    NO = go to SC 5.2</p>	Cat. I
<p>SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species.</p> <p>YES = Category I    NO = go to SC 5.3</p>	Cat. I
<p>SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (see Table 7)</p> <p>YES = Category II    NO = go to SC 5.4</p>	Cat. II
<p>SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?</p> <p>YES = Category II</p>	Cat. II
<p><b>Category of wetland based on Special Characteristics</b> Choose the "highest" rating if wetland falls into several categories. If you answered NO for all types enter "Not Applicable" on p.1</p>	NA

Wetland name or number   E  

### Appendix B: WDFW Priority Habitats In Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/001665/wdfw001665.pdf> )

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).
- Old-growth/Mature forests:** **Old-growth east of Cascade crest:** Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests:** Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.
- Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho Fescue (*Festuca idahoensis*), Sandberg Bluegrass (*Poa secunda*), Rough Fescue (*F. campestris*), or needlegrass (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

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

Wetland name or number: F

### RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): KZ-wet F Date of site visit: 3-4-22

Rated by \_\_\_\_\_ Trained by Ecology? Yes \_\_\_ No \_\_\_ Date of training \_\_\_\_\_

HGM Class Used for Rating \_\_\_\_\_ Unit 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 \_\_\_\_\_

### OVERALL WETLAND CATEGORY IV

#### 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		
	H	M	L	H	M	L	H	M	L
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
Score Based on Ratings	4			4			7		

15

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

CHARACTERISTIC	CATEGORY	
	Circle the appropriate category	
Vernal Pools	II	III
Alkali		I
Wetland with high conservation value		I
Bog		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: F

### Maps and figures required to answer questions correctly (Eastern Washington)

#### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D1.4	
Boundary of 150 ft buffer (can be added to another figure)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (can be added to map of hydroperiods)	H1.3.1	

#### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

#### Lake-fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L 2.2	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

#### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number F

## HGM Classification of Wetland Units in Eastern Washington

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

1. Does the entire wetland unit **meet both** of the following criteria?  
— The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size  
— At least 30% of the open water area is deeper than 10 ft (3 m)  
NO - go to 2      YES - The wetland class is **Lake-fringe (Lacustrine Fringe)**
2. Does the entire wetland unit **meet all** of the following criteria?  
— The wetland is on a slope (*slope can be very gradual*),  
— The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
— Does the water leaves the wetland **without being impounded**?  
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).  
NO - go to 3      YES - The wetland class is **Slope**
3. Does the entire wetland unit **meet all** of the following criteria?  
— The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river  
— The overbank flooding occurs at least once every ten years.  
NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.  
NO - go to 4      YES - The wetland class is **Riverine**
4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*  
NO - go to 5      YES - The wetland class is **Depressional**
5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate unit class to use for the rating system if you have several HGM

Wetland name or number F

classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

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

Wetland name or number F

<b>SLOPE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
<b>S 1. Does the wetland unit have the potential to improve water quality?</b>		
S 1.1 Characteristics of average slope of unit: (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) Slope is 1% or less Slope is > 1% - 2% Slope is > 2% - 5% Slope is greater than 5%	points = 3 points = 2 points = 1 points = 0	3
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES = 3 points NO = 0 points	YES = 3 points NO = 0 points	0
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense plants means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.  Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > 1/2 of area Dense, woody, plants > 1/4 of area Dense, uncut, herbaceous plants > 1/4 of area Does not meet any of the criteria above for plants	points = 6 points = 3 points = 2 points = 1 points = 0	3
Total for S 1 Add the points in the boxes above		6
<b>Rating of Site Potential</b> If score is: 12 = H, 6 - 11 = M, 0 - 5 = L Record the rating on the first page		

<b>S 2. 0 Does the landscape have the potential to improve water quality at the site?</b>		
S 2.1 Is >10% of the buffer area within 150 ft upslope of wetland unit land uses that generate pollutants Yes = 2 No = 0	Yes = 2 No = 0	0
S 2.2 Are there other sources of pollutants coming into the wetland that are not listed in questions S 2.1? Yes = 1 No = 0	Yes = 1 No = 0	0
Total for S 2 Add the points in the boxes above		0
<b>Rating of Landscape Potential</b> If score is: 1 - 2 = M, 0 = L Record the rating on the first page		

<b>S 3.0 Is the water quality improvement provided by the site valuable to society?</b>		
S 3.1 Does the unit discharge directly to a stream, river, or lake that is on the 303d list? Yes = 1 No = 0	Yes = 1 No = 0	0
S 3.2 Is the unit in a sub-basin where water quality is an issue? (at least one aquatic resource in the basin is on the 303(d) list)? Yes = 1 No = 0	Yes = 1 No = 0	0
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		0
<b>Rating of Value</b> If score is: 2 - 4 = H, 1 = M, 0 = L Record the rating on the first page		

Wetland name or number F

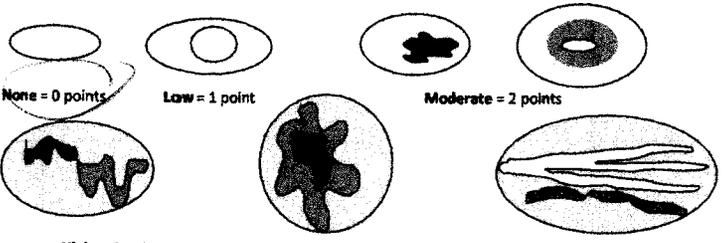
<b>SLOPE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion</b>		
<b>S 4.0 Does the wetland unit have the potential to reduce flooding and stream erosion?</b>		
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid plants covers > 90% of the area of the wetland. YES = 1 All other conditions = 0	YES = 1 All other conditions = 0	0
<b>Rating of Site Potential</b> If score is: 1 = M, 0 = L Record the rating on the first page		

<b>S 5.0 Does the landscape have the potential to support the hydrologic functions at the site?</b>		
S 5.1 Is more than 25% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	Yes = 1 No = 0	0
<b>Rating of Landscape Potential</b> If score is: 1 = M, 0 = L Record the rating on the first page		

<b>S 6.0 Are the hydrologic functions provided by the site valuable to society?</b>		
S 6.1 Distance to the nearest areas downstream that have flooding problems The sub-basin immediately down-gradient of site has surface flooding problems that results in damage to human or natural resources Surface flooding problems are in a sub-basin further down-gradient No flooding problems anywhere downstream points = 2 points = 1 points = 0	points = 2 points = 1 points = 0	1
S 6.2 Has the site has been identified as important for flood conveyance in a regional flood control plan? Yes = 2 No = 0	Yes = 2 No = 0	0
Total for S 6 Add the points in the boxes above		1
<b>Rating of Value</b> If score is: 2 - 4 = H, 1 = M, 0 = L Record the rating on the first page		

NOTES and FIELD OBSERVATIONS:

Wetland name or number F

These questions apply to wetlands of all HGM classes. (only 1 score per box)	
<b>HABITAT FUNCTIONS</b> - indicators that site functions to provide important habitat	
<b>H 1. Does the wetland unit have the potential to provide habitat for many species?</b>	
<b>H 1.1 Categories of vegetation structure</b> Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ acre or $\geq 10\%$ of the unit if unit is $< 2.5$ acres	
<input 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 - 100cm) high are the highest layer with >30% cover <input type="checkbox"/> Emergent plants > 40 in. (> 100cm) 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)	4-6 checks points = 3 3 checks points = 2 2 checks points = 1 1 check points = 0
<b>H 1.2. Is one of the vegetation types "aquatic bed?"</b>	YES = 1 point NO = 0 points
<b>H 1.3. Surface Water</b>	
<b>H 1.3.1</b> Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least $\frac{1}{4}$ acre OR 10% of its area during the March to early June OR in August to the end of September? Note: answer YES for Lake-fringe wetlands YES = 3 points & go to H 1.4 NO = go to H 1.3.2	
<b>H 1.3.2</b> Does the unit have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ acre or 10% of its area, (answer yes only if H 1.3.1 is NO)? YES = 3 points NO = 0 points	
<b>H 1.4. Richness of Plant Species</b>	
Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (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 Salt Cedar (Tamarisk). # of species ____ Scoring: > 9 species = 2 points 4-9 species = 1 point < 4 species = 0 points	
<b>H 1.5. Interspersion of habitats</b>	
Decide from the diagrams below whether interspersion between types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, medium, low, or none. Use map of Cowardin plant classes prepared for questions H1.1 and map of open water from H1.3	
	
NOTE: If you have four or more classes or three plants classes and open water the rating is always "high".	

Wetland name or number F

<b>H 1.6. Special Habitat Features:</b>	
Check the habitat features that are present in the wetland unit. The number of checks is the score. <input checked="" type="checkbox"/> Loose rocks larger than 4" or large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the unit. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) 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 (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)	
<b>H 1. TOTAL Score -</b> Add the check marks in the box above Rating of Site Potential If score is: 12 - 16 = H 6 - 11 = M 0 - 5 = L	
Record the rating on the first page	
<b>H 2.0. Does the landscape have the potential to support habitat at the site?</b>	
<b>H 2.1 Accessible habitat</b> (only area of habitat abutting wetland unit). Calculate: % undisturbed habitat ____ + [(% moderate and low intensity land uses)/2] ____ = ____ % If total accessible habitat is: > 1/3 (33.3%) of 1km circle (~100 hectares) points = 3 20 - 33% of 1km circle points = 2 10- 19% of 1km circle points = 1 <10% of 1km circle points = 0	
<b>H2.2</b> Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle 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 circle points = 0	
<b>H2.3</b> Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (-2) Does not meet criterion above points = 0	
The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs) points = 3	
<b>Total for H 2</b> Add the points in the boxes above Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L	
Record the rating on the first page	
<b>H 3.0 Is the Habitat provided by the site valuable to society?</b>	
<b>H3.1</b> Does the site provides habitat for species valued in laws, regulations or policies? (choose the highest score) Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is a "priority area" for an individual WDFW species <input type="checkbox"/> It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has 3 or more priority habitats within 100m (see Appendix B) <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 100m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	
<b>Rating of Value</b> If score is: 2 = H 1 = M 0 = L	
Record the rating on the first page	

Wetland name or number \_\_\_\_\_

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category.  
 NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type	Category
<p><b>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</b></p> <p><b>SC 1.0 Vernal pools</b>                      Is the wetland unit less than 4000 ft<sup>2</sup>, and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool</li> <li>— The soil in the wetland are shallow (&lt;1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the "wet" season.</li> </ul> <p>YES = Go to SC 1.1      NO - not a vernal pool</p> <p>SC 1.1 Is the vernal pool relatively undisturbed in February and March?                      YES = Go to SC 1.2      NO - not a vernal pool with special characteristics</p>	
<p>SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)?                      YES = Category II      NO = Category III</p>	<p>Cat. II Cat. III</p>
<p><b>SC 2.0 Alkali wetlands</b>                      Does the wetland unit meets one of the following two criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity &gt; 3.0 mS/cm.</li> <li>— The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p>OR does the wetland unit meets two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 80% of the edge of the wetland</li> <li>— More than ¾ of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p>YES = Category I      NO - not an alkali wetland</p>	<p>Cat. I</p>

Wetland name or number \_\_\_\_\_

<p><b>SC 3.0 Wetlands with High Conservation Value (WHCV)</b></p> <p>SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value?                      YES - Go to SC 2.2      NO - Go to SC 2.3</p> <p>SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I      NO = not a WHCV</p> <p>SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhp/wetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhp/wetlands.pdf</a>                      YES - contact WNH/DNR and go to SC 2.4      NO = not a WHCV</p> <p>SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site?                      YES = Category I      NO - not an WHCV</p>	<p>Cat. I</p>
<p><b>SC 4.0 Bogs and Calcareous Fens</b>                      Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</p> <p>SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)?                      Yes - go to SC 4.3      No - go to SC 4.2</p> <p>SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                      Yes - go to SC 4.3      No - is not a bog for rating</p> <p>SC 4.3. Does an area within the unit have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                      Yes - Category I bog      No - go to SC 4.4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4 Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy                      Yes - Category I bog      NO - go to question SC 4.5</p> <p>5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                      Yes - Is a Calcareous Fen for purpose of rating      No - go to Question 6</p> <p>6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met:                      • Marl deposits (calcium carbonate (CaCO<sub>3</sub>) precipitate) occur on the soil surface or plant stems                      • The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland                      Yes - Is a Category I calcareous fen      No - Is not a calcareous fen</p>	<p>Cat. I</p>

Wetland name or number 3 F

<p><b>SC 3.0 Forested Wetlands</b> Does the wetland unit have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified a forested class is present in question H 1.1)</p> <ul style="list-style-type: none"> <li>The wetland is within the "100 year" floodplain of a river or stream</li> <li>aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> </ul> <p>— There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1)</p> <p>YES = go to SC 5.1 NO = <del>not a forested wetland with special characteristics</del></p>	
<p>SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)</p> <p>YES = Category I NO = go to SC 5.2</p>	Cat. I
<p>SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species.</p> <p>YES = Category I NO = go to SC 5.3</p>	Cat. I
<p>SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (see Table 7)</p> <p>YES = Category II NO = go to SC 5.5</p>	Cat. II
<p>SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream?</p> <p>YES = Category II</p>	Cat. II
<p><b>Category of wetland based on Special Characteristics</b> Choose the "highest" rating if wetland falls into several categories. If you answered NO for all types enter "Not Applicable" on p.1</p> <p style="text-align: right; font-size: 2em;">NA</p>	

Wetland name or number \_\_\_\_\_

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> )

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

\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

\_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).

\_\_\_ **Old-growth/Mature forests:** **Old-growth east of Cascade crest:** Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests:** Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.

\_\_\_ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).

\_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

\_\_\_ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.

\_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

\_\_\_ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

\_\_\_ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho Fescue (*Festuca idahoensis*), Sandberg Bluegrass (*Poa secunda*), Rough Fescue (*F. campestris*), or needlegrass (*Achnatherum* spp.).

\_\_\_ **Juniper Savannah:** All juniper woodlands.

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

Search

Cle Elum, WA Search

Coordinates: 37 25.818' N, 122 05.96' W

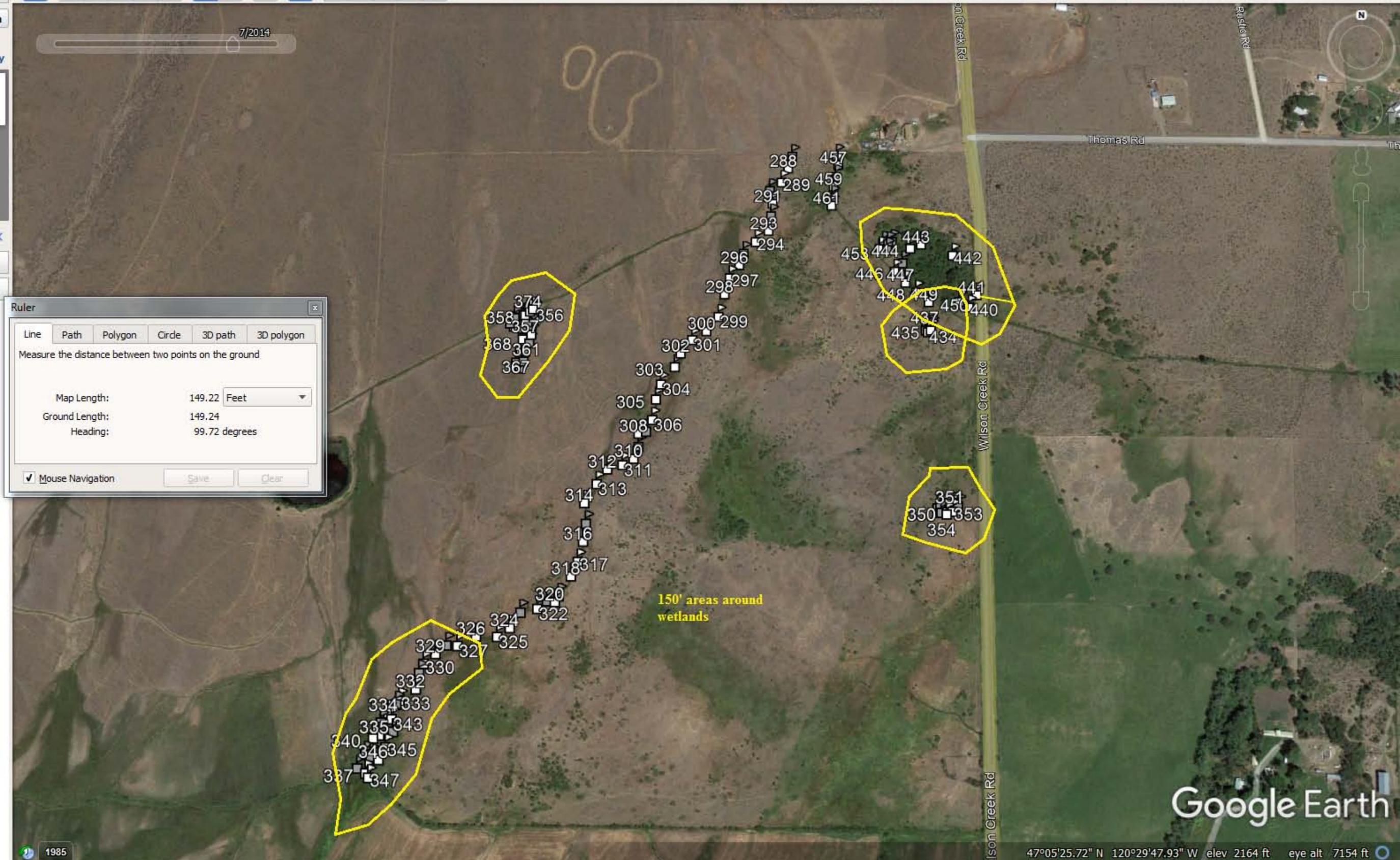
Get Directions History

Cle Elum

Places

Layers

- Primary Database
- Announcements
- Borders and Labels
- Places
- Photos
- Roads
- 3D Buildings
- Weather
- Gallery
- More
- Terrain



Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length:	149.22	Feet
Ground Length:	149.24	
Heading:	99.72	degrees

Mouse Navigation Save Clear

150' areas around wetlands

Google Earth



# Water Quality Atlas Map

[Legend](#)
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[Other](#)

Keyboard Identify
 Measure Distance
 Measure Area
 Image Service

Usage:

Click on map to add measure points. Double-click to finish.

Unit

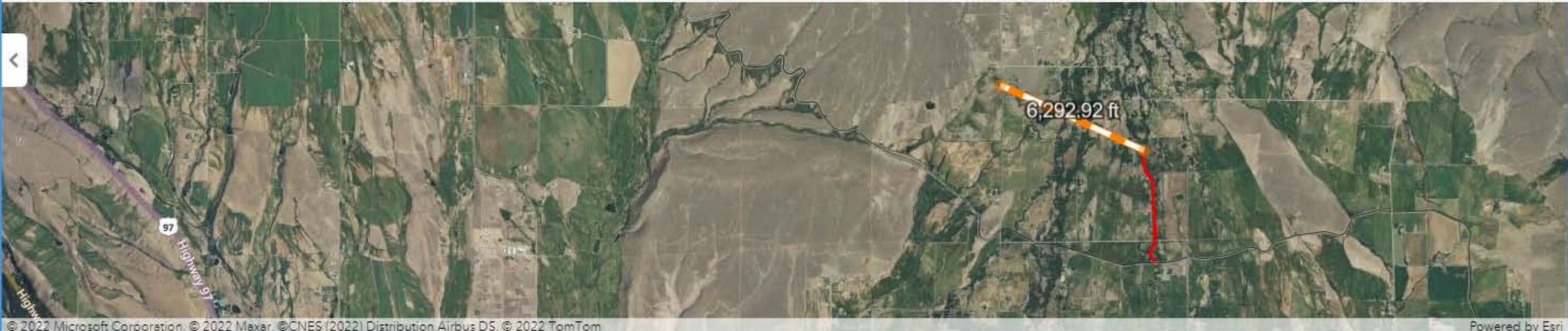
Feet

Distance

6,292.92 ft

[New measurement](#)

Bing Imagery



[Assessed Water/Sediment](#)
[Filter Applied](#)
[Clear filters](#)
[Zoom to selection](#)
[Table to CSV](#)

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	66746	170200011202_01_01	5	Water	Dissolved Oxygen	<a href="#">View</a>
	11253	170200050203_01_01	5	Water	Temperature	<a href="#">View</a>
	42784	170200050203_01_01	5	Water	Dissolved Oxygen	<a href="#">View</a>

Show 5 entries Showing 1 to 5 of 4,548 entries

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Cle Elum, WA Search

lat: 37 25.818' N, 122 05.96' W

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- Primary Database
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  - Weather
  - Gallery
  - More
  - Terrain

Timeline: 1985 - 7/2014 - 2021

Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length: 1.00 Kilometers

Ground Length: 1.00

Heading: 72.07 degrees

Mouse Navigation Save Clear

