

#### **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 ¼ of Section 6 Township 18 North, Range 19 East of the W.M in Kittitas County, Washington, and the SE ¼ 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

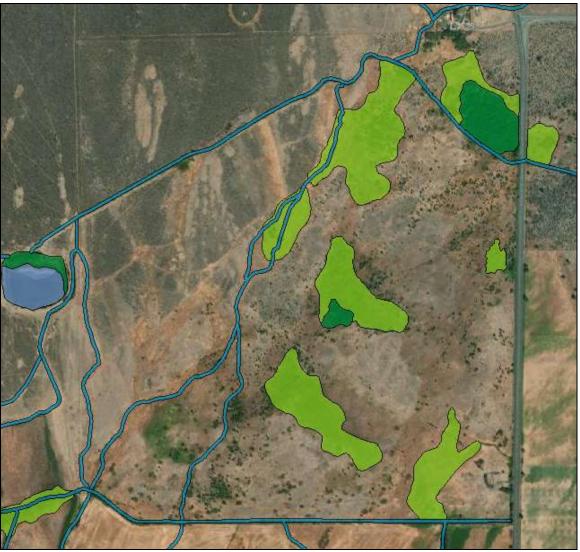
The Kittitas Taxsifter website with streams and wetland layers activated depicts several emergent wetlands located within areas that were historically flood irrigated. There is also a Type N stream passing through the center of the site as well as several of the agricultural ditches and other areas as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

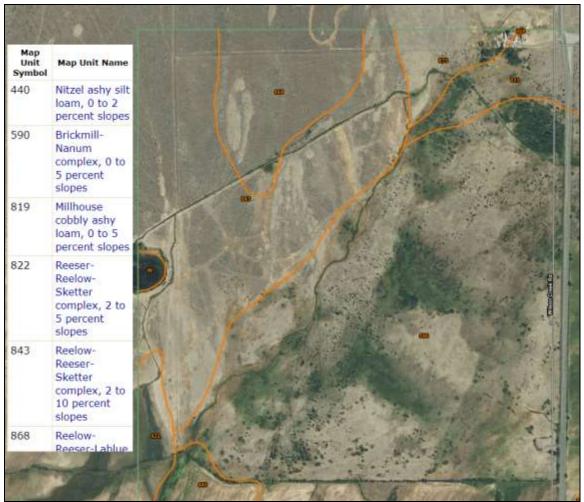
The NWI map depicts the same wetlands and streams as the Kittitas County website. In fact the Taxsifter mapping was taken from the NWI maps. These wetlands were interpreted from aerial photographs by the US Fish and Wildlife Service using 2017 aerial photographs with <u>no</u> <u>ground-truthing</u>.



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 ashy silt loam, Brickmill-Nanum complex, Millhouse cobbly ashy 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**

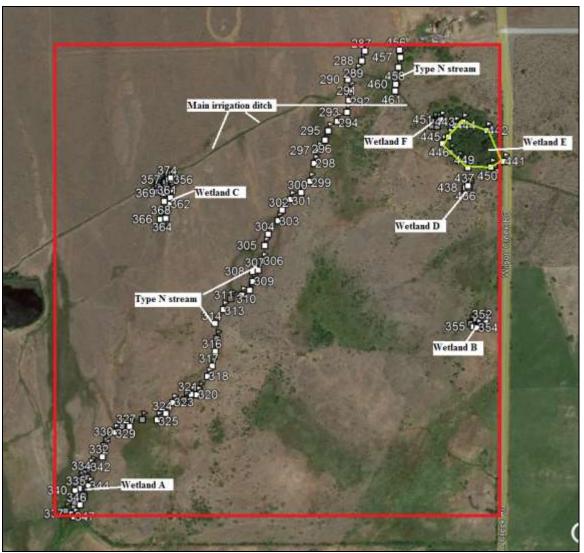
As previously described, the site is a large area of rangeland that is sporadically used to graze cattle. The site slopes from a high point on the northeast to a low on the southwest corner. A large irrigation ditch passes across the north end of the site and drains westerly towards a large stock watering 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 doing 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.

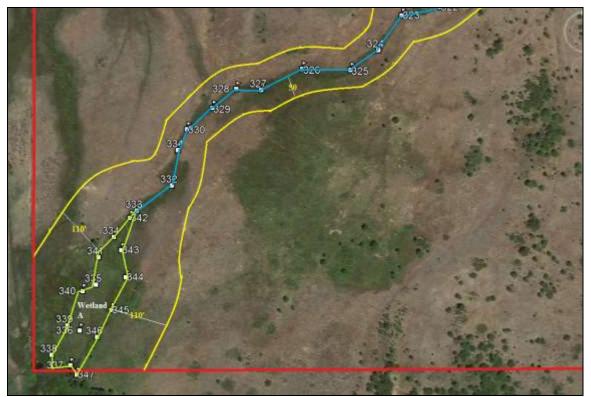
According to KCMC 17A.04.030.4, Type N streams have a 40' buffer measured from the ordinary high water mark in the Columbia Plateau region.

	Riparian Management Zone Width			
Stream Type	Cascade Ecoregion (feet)	Columbia Plateau Ecoregion (feet)		
Type S (Shoreline)	See the SMP	See the SMP		
Type F	150	100		
Туре 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.

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>
Ĩ	125 ft	190 ft	250 ft
IL	100 ft	150 ft	200 ft
111	75 ft	110 ft	150 ft
IV	25 ft	40 ft	50 ft

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

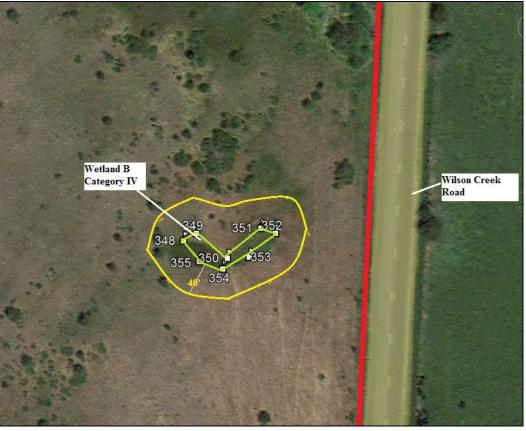
#### Wetlands B, C, D & F

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.

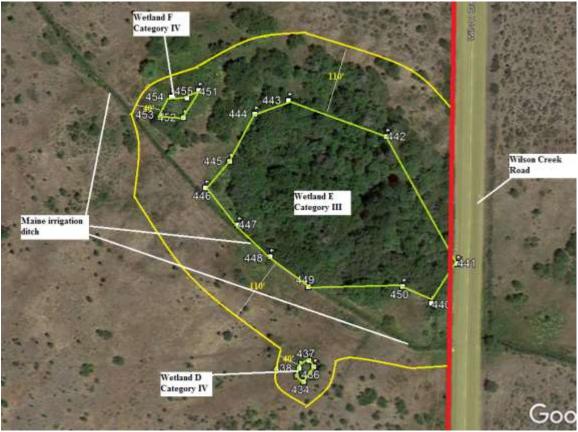


Above: Wetland B, Below Wetland C



#### 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 <u>esewall@sewallwc.com</u>.

Sincerely, Sewall Wetland Consulting, Inc.

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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.

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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.

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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:

Occurence Name	Federal Status	State Status	Sensitive Location
Mule deer	N/A	N/A	Νο
Eastside Steppe	N/A	N/A	Νο
Golden eagle	N/A	Candidate	Yes
Northern Spotted Owi	Threatened	Endangered	Yes

#### PHS Species/Habitats Details:

Mule deer	
Scientific Name	Odocoileus hemionus hemionus
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	NA
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00612
Geometry Type	Polygons

Eastside Steppe	
Priority Area	Habitat Feature
Site Name	Kittitas County
Accuracy	ΝΑ
Notes	EVT: Columbia Plateau Steppe and GrasslandState 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	Ν
SGCN	Ν
Display Resolution	AS MAPPED
Geometry Type	Polygons

Golden eagle	
Scientific Name	Aquila chrysaetos
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026

Northern Spotted Owl	
Scientific Name	Strix occidentalis
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
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge.

#### PHS Report

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.

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estigator(s):	Sewall		Section, Towns	hip, Range:5	31 TIUNI	219E	
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pregion (LRR):		Lat:		Long:		Datum:	
Map Unit Name:					WI classification:		
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Vegetation, Soil	, or Hydrology	_ significantly	disturbed?	Are "Normal Circun	stances" present?	res No	
Vegetation, Soil	, or Hydrology	_ naturally pro	blematic?	(If needed, explain	any answers in Rema	irks.)	
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vdrophytic Vegetation Present?	Yes		Is the S	ampled Area			
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etland Hydrology Present?	Yes						
GETATION – Use scient	<b>_</b>	Absolute	Dominant Inc		Test worksheet:		
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Sampling Point:

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(inches)	Color (moist) %	Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture Remarks
16	10W313		ght w/colley
<sup>1</sup> Tvoe: C=Co	oncentration, D=Depletion, RM=Re	educed Matrix, CS=Covered or Coated Sand	I Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	indicators: (Applicable to all LR		Indicators for Problematic Hydric Solls <sup>3</sup> :
Histosol	(A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
	bipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
Black Hi	stic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydroge	n Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified	l Layers (A5) ( <b>LRR C</b> )	Depleted Matrix (F3)	Other (Explain in Remarks)
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	lucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
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Remarks:			
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	Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
U	iter Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturatio		Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
	larks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
	nt Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living	
	posits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
	Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils	(C6) Saturation Visible on Aerial Imagery (C9)
Inundatio	on Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-S	tained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Obser	vations:	>	

Water-Stained Leaves (B9) Other (Explain in Re		Other (Explain in Remarks)	FAC-Neutral Test (D5)	
Field Observations:		>		
Surface Water Present?	Yes No	Depth (inches):		
Water Table Present?	Yes No	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	Wetland Hydrology Present? Yes No	P
Describe Recorded Data (stro	eam gauge, monit	toring well, aerial photos, previous inspe	ections), if available:	
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WETLAND					•
roject/Site: KZ Fruhold					
plicant/Owner:			State: WA	Sampling Point:	10p #
vestigator(s): <u>Ed</u> Sewud	1	Section, Townsh	lip, Range: <u>531</u>	TIGN RIG	E
ndform (hillslope, terrace, etc.):		Local relief (con	cave, convex, none):	Slo	De (%):
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e climatic / hydrologic conditions on the site typic		ar2 Vac	-		
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re Vegetation, Soil, or Hydrology _			(If needed, explain any ans		
UMMARY OF FINDINGS - Attach site	e map showing	sampling po	pint locations, transe	cts, important fe	atures, etc
Hydrophytic Vegetation Present? Yes	No				
		1	mpled Area		
	No	within a \	Wetland? Yes	No	-
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EGETATION - Use scientific names of	of plants.				
	Absolute	Dominant India	cator Dominance Test w	orksheet:	
ree Stratum (Plot size:)		Species? Sta	Itus Number of Dominar	nt Species	2
•			That Are OBL, FAC	W, or FAC:	) (A)
			Total Number of Do	minant -	2
3.			Species Across All 1	Strata:	<u>&gt;</u> (B)
4			Percent of Dominan		es)
Sapling/Shrub Stratum (Plot size:	)	_ = Total Cover	That Are OBL, FAC	W, or FAC:	(A/B)
I			Prevalence Index v	vorksheet:	**************************************
2.			Total % Cover	of: Multiph	y by:
3	·····	·	OBL species	x1=	
L				x 2 =	
5			FAC species		
Herb Stratum (Plot size:)		_ = Total Cover		x4=	
1. Comex Spp	60	J.		×5=	
Juncus eFRisus	20		tw Column Totals:	(A)	
. Twees bultures	20	F.	HW Prevalence In	dex = B/A =	
l			Hydrophytic Vegel		*****
			Dominance Tes	it is >50%	
5					
5			Prevalence Inde	ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide	supporting
5 3 7			Prevalence Inde	ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide arks or on a separate	sheet)
5 6 7 3			Prevalence Inde	ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide	sheet)
5 6 7 8 8 Woody Vine Stratum (Plot size:	)	Total Cover	Prevalence Inde	ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide arks or on a separate drophytic Vegetation <sup>1</sup>	sheet) (Explain)
5 6 7 8 8 8 9 9 9 9 1	)		Prevalence Inde     Morphological /     data in Rem     Problematic Hy <sup>1</sup> Indicators of hydric	ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide arks or on a separate drophytic Vegetation <sup>1</sup> soil and wetland hydr	sheet) (Explain)
5 6 7 8 8 Woody Vine Stratum (Plot size:	)	= Total Cover	Prevalence Inde     Morphological /     data in Rem     Problematic Hy <sup>1</sup> Indicators of hydric     be present, unless of	ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide arks or on a separate drophytic Vegetation <sup>1</sup>	sheet) (Explain)
5 6 7 8 8 8 9 1 2	)	Total Cover		ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide arks or on a separate drophytic Vegetation <sup>1</sup> soil and wetland hydr	sheet) (Explain)
5 5 7 3 3 <u>Noody Vine Stratum</u> (Plot size: 1	)	Total Cover	Prevalence Inde     Morphological /     data in Rem     Problematic Hy <sup>1</sup> Indicators of hydric     be present, unless of     Hydrophytic     Vegetation	ex is ≤3.0 <sup>1</sup> Adaptations <sup>1</sup> (Provide arks or on a separate drophytic Vegetation <sup>1</sup> soil and wetland hydr	sheet) (Explain) rology must tic.

S	n	1	
-	v		-

	cription: (Describe to the dept	h needed to document the indicator or confirm	n the absence of indicators.)
Depth	Matrix	Redox Features	
(inches)	Color (moist) %	Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture Remarks
14	10 YN 2/1	commond, dishot	cubby In
		Reduced Matrix, CS=Covered or Coated Sand G	
•		LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Solis <sup>3</sup> :
_ Histosol		Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
	pipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
	istic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
	en Sulfide (A4)	Loarny Gleyed Matrix (F2)	Red Parent Material (TF2)
	d Layers (A5) (LRR C)	Depleted Matrix (F3) Redox Dark Surface (F6)	Other (Explain in Remarks)
	uck (A9) ( <b>LRR D)</b> d Below Dark Surface (A11)	Depleted Dark Surface (F7)	
	ark Surface (A12)	Redox Depressions (F8)	<sup>3</sup> Indicators of hydrophytic vegetation and
	Aucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
	Sleyed Matrix (S4)		unless disturbed or problematic.
	Layer (if present):		
Type:	Layer (if present):		Hydric Soil Present? Yes No
Type:	Layer (if present):		
testrictive Type: Depth (In	Layer (if present):		
estrictive Type: Depth (In	Layer (if present):		
estrictive Type: Depth (In	Layer (if present):		
estrictive Type: Depth (In emarks:	Layer (if present): ches):		
Type: Depth (In emarks:	Layer (if present): ches):		
Estrictive Type: Depth (In emarks: /DROLO	Layer (if present): ches): GY drology Indicators:		Hydric Soil Present? Yes <u>No</u>
estrictive Type: Depth (In emarks: /DROLO /etland Hy rimary India	Layer (if present): ches): IGY drology Indicators: cators (minimum of one required	: check all that apply)	
estrictive Type: Depth (In emarks: /DROLO /etland Hy rimary India Surface	Layer (if present): ches): GAY drology Indicators: cators (minimum of one required Water (A1)	<u>: check all that apply)</u> Salt Crust (B11)	Hydric Soil Present?       Yes         No       No         Secondary Indicators (2 or more required       Water Marks (B1) (Riverine)
estrictive Type: Depth (In emarks: /DROLO /etland Hy rimary India Surface High Wa	Layer (if present): ches): GY drology Indicators: cators (minimum of one required Water (A1) ater Table (A2)	<u>; check all that apply)</u> Salt Crust (B11) Biotic Crust (B12)	Hydric Soil Present?       Yes       No
Estrictive Type: Depth (In emarks: /DROLO /etland Hy rimary India Surface High Wa Saturati	Layer (if present): ches): GY drology Indicators: cators (minimum of one required Water (A1) ater Table (A2) on (A3)	<u>: check all that apply)</u> Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13)	Hydric Soil Present?       Yes       No
Estrictive Type: Depth (In emarks: /DROLO /etland Hy rimary India Surface High Wa Saturati	Layer (if present): ches): GY drology Indicators: cators (minimum of one required Water (A1) ater Table (A2)	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Hydric Soil Present?       Yes       No
estrictive Type: Depth (In emarks: /DROLO /etland Hy rimary India Surface High Wa Saturatia Water M	Layer (if present): ches): GY drology Indicators: cators (minimum of one required Water (A1) ater Table (A2) on (A3)	<u>: check all that apply)</u> Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13)	Hydric Soil Present?       Yes       No
estrictive Type: Depth (In emarks: //DROLO //etiand Hy rimary India Surface High Wa Saturati Water M Sedimenti	Layer (if present): ches): GY drology Indicators: cators (minimum of one required Water (A1) ater Table (A2) on (A3) Marks (B1) (Nonriverine)	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Hydric Soil Present?       Yes       No
Eestrictive Type: Depth (In Temarks: CDROLO Vetland Hy rimary India Surface High Wa Saturati Water N Sedimei Drift De	Layer (if present): ches): GY drology Indicators: cators (minimum of one required Water (A1) ater Table (A2) on (A3) farks (B1) (Nonriverine) nt Deposits (B2) (Nonriverine)	<u>: check all that apply)</u> Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rod	Hydric Soil Present?       Yes       No
Estrictive Type: Depth (In emarks: //DROLO /etland Hy rimary India Surface High Wa Saturati Water M Sedimea Drift De Surface	Layer (if present): ches):	<ul> <li><u>check all that apply</u>)</li> <li> Salt Crust (B11)</li> <li> Biotic Crust (B12)</li> <li> Aquatic Invertebrates (B13)</li> <li> Hydrogen Sulfide Odor (C1)</li> <li> Oxidized Rhizospheres along Living Rot</li> <li> Presence of Reduced Iron (C4)</li> <li> Recent Iron Reduction in Tilled Soils (Cd)</li> </ul>	Hydric Soil Present?       Yes       No
Estrictive Type: Depth (In emarks: // // // // // // // // // // // // //	Layer (if present): ches):	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rod Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4)	Hydric Soil Present?       Yes       No
Estrictive Type: Depth (In emarks: /DROLO /etland Hy fimary India Surface High Wa Saturati Water M Sedimer Drift De Surface Inundati	Layer (if present): ches):	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rod Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Cf Thin Muck Surface (C7)	Hydric Soil Present?       Yes       No
estrictive Type: Depth (In emarks: Depth Sector etland Hy imary India Surface High Wa Saturati Water M Sedimer Sedimer Drift De Surface Inundati Water-S eld Obser	Layer (if present): ches):	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rod Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Cf Thin Muck Surface (C7)	Hydric Soil Present?       Yes       No

0

Wetland Hydrology Present? Yes

 Saturation Present?
 Yes
 Mo
 Depth (inches):
 Organization
 Wetland Hydrol

 (includes capillary fringe)
 Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Image: Control of the stream gauge inspection of the stream gauge inspecting gauge inspection of the stream gauge inspec No \_\_\_\_\_ Depth (inches):

Remarks:

No

roject/Site: <u>NZ Fruhold</u>			Hitas	Sampling Data:	2-17-2
			State: WA		DP#3
vestigator(s): Ed Sewell		Section Township Ra	531 T	IUN RIGI	1000
ndform (hillslope, terrace, etc.):		-			
bregion (LRR):	601		NWI classifi		
e climatic / hydrologic conditions on the site typical f					
	-		·····- ·	•	/
Vegetation, Soil, or Hydrology			"Normal Circumstances"		No
e Vegetation, Soil, or Hydrology		-	eded, explain any answ	-	
JMMARY OF FINDINGS – Attach site n	nap showing	sampling point l	ocations, transects	s, important fea	atures, etc.
		is the Sampled	l Area	/	·····
lydric Soil Present? Yes Vetland Hydrology Present? Yes	∠ No No	within a Wetla	nd? Yes 🗾	No	
lemarks:		1	······		
GETATION – Use scientific names of	plants.				
ree Stratum (Plot size:)	Absolute		Dominance Test wor		· · · · · · · · · · · · · · · · · · ·
		Species? Status	Number of Dominant S		2_ (1)
			That Are OBL, FACW,		(A)
			Total Number of Domi		
					Č / (D)
			Species Across All Str	ata:	(B)
•			Species Across All Str Percent of Dominant S	sta:	-15-2-1
apling/Shrub Stratum (Plot size:)		_ = Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW,	eta:	
apling/Shrub Stratum (Plot size:)		_ = Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo	eta:	(A/B)
apling/Shrub Stratum (Plot size:)		_ ≕ Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo Total % Cover of:	ata:	(A/B)
apling/Shrub Stratum (Plot size:)		_ = Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:)		_ = Total Cover	Species Across All Str. Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:)		_ = Total Cover	Species Across All Str. Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:)		= Total Cover	Species Across All Str. Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:)		_ = Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
erb Stratum (Plot size:) 		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:) erb Stratum (Plot size:) Covex \$pp Juncus builting	60	= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:) erb Stratum (Plot size:) Curex \$pp Juncus keultrous		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:)		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
erb Stratum (Plot size:) 		_ = Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum (Plot size:)		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
apling/Shrub Stratum       (Plot size:)		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
iapling/Shrub Stratum       (Plot size:)		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
Jane us         Bailtheus           Image: Stratum         (Plot size:)		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)
Sapling/Shrub Stratum       (Plot size:)         Sapling/Shrub Stratum       (Plot size:)         Serb Stratum       (Plot size:)         Stratum       (Plot size:)         Stratum       (Plot size:)         Serb Stratum       (Plot size:)         Serb Stratum       (Plot size:)		_ = Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo Total % Cover of: OBL species FACW species FAC species FACU species UPL species Column Totals: Prevalence Index Dominance Test is Prevalence Index Problematic Hydro <sup>1</sup> Indicators of hydric so be present, unless dist	ata:	(A/B)
iapling/Shrub Stratum       (Plot size:)		= Total Cover	Species Across All Str Percent of Dominant S That Are OBL, FACW, Prevalence Index wo 	ata:	(A/B)

Sampling Point:

DA#3

Profile Description: (Describe to the de	epth needed to document the indicator or confirm	n the absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) %	<u>Color (moist) % Type<sup>1</sup> Loc<sup>2</sup></u>	Texture Remarks
16 104-211	Few An Port	cubby lan
<sup>1</sup> Type: C=Concentration, D=Depletion, R	M=Reduced Matrix, CS=Covered or Coated Sand G	rains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soll indicators: (Applicable to a		Indicators for Problematic Hydric Solis <sup>3</sup> :
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Strattified Layers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	<sup>s</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)		unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		
Depth (inches):		Hydric Soil Present? Yes No
Remarks:		
IYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one requi	red: check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine	Oxidized Rhizospheres along Living Roo	
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils (Co	• • •
Inundation Visible on Aerial Imagery		Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes	No Depth (inches):	
Water Table Present? Yes	No Depth (inches):	
(includes capillary fringe)		and Hydrology Present? Yes No
Describe Recorded Data (stream gauge, i	monitoring well, aerial photos, previous inspections),	it available:
Remarks:	·	······································

	oject/Site: KZ Fruchol	d	City/County:K	ittitas	Sampling Date: 2-17-7
sector, Township, Range:       531 T 19 N 7.19 E         indom (hildspe, terrace, dt.):       Local relief (concave, convex, none):       Slope (%):         indom (hildspe, terrace, dt.):       Lat:       Long:       Deturn:         indom (hildspe, terrace, dt.):       Lat:       Long:       Deturn:         indom (hildspe, terrace, dt.):       Version (LR%)       Lat:       Long:       Deturn:         indom (hildspe, terrace, dt.):       Version (LR%)       No       (f no, explain in Remarks.)         o drastic / hydrology inductive division of year? Yes       No       (f no, explain in Remarks.)         JMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc       http://with.solf.present?       Yes       No         Version Victor Solf Present?       Yes       No       is the Sampled Ares       within a Wetand?       Yes       No         Species Aross All Status       Mo       Species Z Status       Intar Aro BL, FACW, or FAC:       (A)         Species Aross All Status       (B)       Percent of Dominant Species       (A)         Total Number of Dominant Species       (A)       (A)       Species Aross All Status       (B)         Species Aross All Status       (B)       Percent of Dominant Species       (A)       (B)         Spe	plicant/Owner:			State: WA	Sampling Point: DP#4
region (LRR):       Lat:       Long:       Detum:         IMap Unit Name:	estigator(s): <u>Ed Sewu</u>	N	Section, Township, Ra	ange: 531 T	IN RIGE
region (LRR):       Lat:       Long:       Detum:         Map Unit Name:	dform (hillslope, terrace, etc.):		Local relief (concave,	convex, none):	Slope (%):
Map Unit Name:					
climatic / hydrologic conditions on the site typical for this time of year? Yes No (if no, explain in Remarks.)         Vegetation Soil, or Hydrology	Map Unit Name:		,	<u>*</u>	
VegetationSoilor Hydrologyneturally problematic?       (If needed, explain any answers in Remarks.)         MMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc         drophytic Vegetation Present?       YesNo			ar? Yes No _	(If no, explain in Re	emarks.)
MMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc         drophytic Vegetation Present?       Yes       No         dris Soil Present?       Yes       No         etland Hydrology Present?       Yes       No         getTATION - Use scientific names of plants.       Mesolute       Dominant Indicator         marks:       Absolute       Dominant Indicator         Marks:       Absolute       Dominant Indicator         Marks:       Marks:       It is the Sampled Area         es Stratum (Plot size:	Vegetation, Soil, or Hydrology	/ significantly	disturbed? Are	"Normal Circumstances" pi	resent? Yes No
vdrophytic Vegetation Present?       Yes       No	Vegetation, Soil, or Hydrology	/ naturally pro	oblematic? (If n	eeded, explain any answer	s in Remarks.)
ydrophytic Vegetation Present?       Yes       No	IMMARY OF FINDINGS - Attach si	te map showing	sampling point	locations, transects.	important features, etc
drite Sail Present?       Yes       No       within a Wetland?       Yes       No         GETATION - Use scientific names of plants.         ge Stratum (Plot size:					mportant reatures, etc
etand Hydrology Present?       Yes       No       Yes			is the Sample		
GETATION - Use scientific names of plants.         GETATION - Use scientific names of plants.         Booling of Contrast Indicator         Stratum (Plot size:			within a Wetla	ind? Yes	No
GETATION - Use scientific names of plants.         as Stratum (Plot size:					
Image: Stratum       (Plot size:)		Absolute			sheet:
Image: An orbit of the control of t	ee Stratum (Plot size: )				
Total Number of Dominant       1         species Across All Strata:       (B)         percent of Dominant Species       (A/B)         Prevalence Index worksheet:       (A/B)         Total % Cover of.       Multiply by:         OBL species       x 1 =         FACW species       x 2 =         FACW species       x 3 =         FACW species       x 3 =         FACU species       x 3 =         FACU species       x 4 =         UPL species       x 5 =         Column Totals:       (A)         If o mvs       fectrom         Hydrophytic Vegetation Indicators:				indition of command of	
Species Across All Strata:       (B)         indind/Shrub Stratum (Plot size:)       = Total Cover         Factor of Dominant Species That Are OBL, FACW, or FAC:(A/B)         Prevalence Index worksheet:         Total % Cover of:       Multiply by:         OBL species       1 =				Total Number of Domina	ant ì
apling/Shrub Stratum (Plot size:)					
apling/Shrub Stratum       (Plot size:)         Prevalence Index worksheet:				Percent of Dominant Sp	ecies 🕖
	apling/Shrub Stratum (Plot size:	)	_ = 1 otal Cover	That Are OBL, FACW, o	or FAC: (A/B)
OBL species       x1 =         FACW species       x2 =         FAC species       x3 =         FAC species       x3 =         FAC species       x4 =         UPL species       x5 =         Oournot       UPL         Prevalence Index = B/A =			-	Prevalence Index work	sheet:
arb Stratum (Plot size:)			· ·····		
arb Stratum (Plot size:)					
arb Stratum (Plot size:)       40 <td></td> <td><u> </u></td> <td>= Total Cover</td> <td></td> <td></td>		<u> </u>	= Total Cover		
137 omus       Teleform       40       40       40       40       60       60         Column Totals:       (A)       (B)       Prevalence Index = B/A =			<b>_</b>		
Prevalence Index = B/A =         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)         = Total Cover <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         = Total Cover         Hydrophytic Vegetation			·	Column Totals:	(A) (B)
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)         = Total Cover         Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         = Total Cover         Hydrophytic Vegetation         Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				Prevalence Index	= R/A =
Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) = Total Cover Total Cover <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic = Total Cover Hydrophytic Vegetation				Prevalence Index is	≤3.0 <sup>1</sup>
oody Vine Stratum (Plot size:)      = Total Cover      Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)         'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				Morphological Adap	tations <sup>1</sup> (Provide supporting
/oody Vine Stratum (Plot size:)      = 1 otal Cover       1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.        = Total Cover       Hydrophytic Vegetation					
	Voody Vine Stratum (Plot size:		_ = Total Cover		nyw vegolauon (Explain)
	WWW THIN WERWIN TO UN SIZE.			<sup>1</sup> Indicators of hydric soil	and wetland hydrology must
= Total Cover Hydrophytic Vegetation	·				
				1	

Sampling Point: DP44

Depth	Matrix			ox Feature			the absence	•
(inches) Color (n				%		Loc <sup>2</sup>	Texture .	Remarks
14 104M	3/2						co bhy	lan
							F	
<u></u>			· · · · · · · · · · · · · ·			<u></u>		
	<u></u>					<u></u>		
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	······						<del></del>	
					·	·		
Type: C=Concentration	, D=Depletion,	RM=Red	uced Matrix, C	S=Covered	l or Coate	d Sand Gr	ains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
lydric Soil indicators:	(Applicable to	o all LRR	s, unless othe	rwise not	ed.)		Indicators	s for Problematic Hydric Solis <sup>3</sup> :
Histosol (A1)		-	Sandy Red	ox (S5)			1 cm i	Muck (A9) (LRR C)
Histic Epipedon (A2)	)	-	Stripped M	atrix (S6)			2 cm	Muck (A10) (LRR B)
Black Histic (A3)		-	Loamy Mu	-			Redu	ced Vertic (F18)
Hydrogen Sulfide (A	•	-	Loamy Gle		(F2)			Parent Material (TF2)
Stratified Layers (A5		-	Depieted N	• •			Other	(Explain in Remarks)
1 cm Muck (A9) (LR		-	Redox Dar					
Depleted Below Dar	•	) -	Depleted D		• •		St	a serie da s
Thick Dark Surface	• •	-	Redox Dep Vernal Poo	•	-0)			s of hydrophylic vegetation and
Sandy Mucky Miner Sandy Gleyed Matri:		-		46 (1°9)				I hydrology must be present, disturbed or problematic.
Restrictive Layer (if pro				<u></u>			T	
<b>T</b>								
Depth (inches):							Livelete Col	
Depth (inches):			• •	·			Hydric Soi	il Present? Yes No
Depth (inches): Remarks:					******		Hydric Soi	il Present? Yes No 💆
							Hydric Soi	i Present? Yes No 💆
							Hydric Soi	i Present? Yes No 💆
Remarks:							Hydric Soi	i Present? Yes No 💆
Remarks: YDROLOGY	licators:						Hydric Soi	i Present? Yes No <u>&gt;</u>
Remarks: YDROLOGY Wetland Hydrology Ind		nuired: ch	eck all that app	iv)	*****		1	ndary Indicators (2 or more require
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir		auired; ch					<u>Seco</u>	ondary Indicators (2 or more require
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1)	num of one rec	nuired; ch	Salt Crus	t (B11)			<u>Seco</u>	ondary Indicators (2 or more require Water Marks (B1) (Riverine)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A	num of one rec	nuired: ch	Salt Crust	t (B11) ist (B12)	s (B13)		<u>Seco</u>	andary Indicators (2 or more require Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3)	num of one rec \2)	auired; ch	Salt Crus Biotic Cru Aquatic Ir	t (B11) ist (B12) ivertebrate			<u>Seco</u>	ondary Indicators (2 or more require Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M	num of one rec \2) Ionriverine)		Salt Crus Biotic Cru Aquatic Ir Hydrogen	t (B11) Ist (B12) Ivertebrate I Sulfide Od	dor (C1)	Living Roc	<u>Seco</u>	ondary Indicators (2 or more require Water Marks (B1) ( <b>Riverine</b> ) Sediment Deposits (B2) ( <b>Riverine</b> ) Drift Deposits (B3) ( <b>Riverine</b> ) Drainage Patterns (B10)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (N Sediment Deposits (	num of one rec \2) Nonriverine) (B2) (Nonriver		Salt Cruss     Biotic Crus     Aquatic Ir     Hydrogen     Oxidized	t (B11) ist (B12) ivertebrate	dor (C1) res along		<u>Seco</u> \ \ \ \ \	ondary Indicators (2 or more require Water Marks (B1) ( <b>Riverine</b> ) Sediment Deposits (B2) ( <b>Riverine</b> ) Drift Deposits (B3) ( <b>Riverine</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M Sediment Deposits ( Drift Deposits (B3) (	num of one rec \2) Ionriverine) (B2) (Nonriver Nonriverine)		Salt Cruss Biotic Cru Aquatic Ir Hydrogen Oxidized Presence	t (B11) ist (B12) ivertebrate Sulfide Od Rhizosphe of Reduce	dor (C1) res along id Iron (C4	4)	<u>Seco</u> S _ S S _ S S S S S	andary Indicators (2 or more require Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (N Sediment Deposits (	num of one rec \2) (onriverine) (B2) (Nonriver Nonriverine) (B6)	in <del>e</del> )	Salt Cruss     Biotic Cru     Biotic Cru     Aquatic Ir     Hydrogen     Oxidized     Presence     Recent In	t (B11) ost (B12) overtebrate o Sulfide Od Rhizosphe	dor (C1) res along d Iron (C4 on in Tille	4)	<u>Seco</u> <u>Seco</u> <u>Seco</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u>	endary Indicators (2 or more require 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
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks	num of one rec \2) (onriverine) (B2) (Nonriver Nonriverine) (B6) n Aerial Image	in <del>e</del> )	Salt Cruss     Biotic Cru     Biotic Cru     Aquatic Ir     Hydrogen     Oxidized     Presence     Recent In     Thin Muc	t (B11) Ist (B12) Ivertebrate Sulfide Of Rhizosphe of Reduce on Reducti	dor (C1) res along d Iron (C4 on in Tille C7)	4)	<u>Seco</u> <u>Seco</u> <u>Seco</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u>	andary Indicators (2 or more require Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (N Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks Inundation Visible o Water-Stained Leav	num of one rec \2) (onriverine) (B2) (Nonriver Nonriverine) (B6) n Aerial Image	in <del>e</del> )	Salt Cruss     Biotic Cru     Biotic Cru     Aquatic Ir     Hydrogen     Oxidized     Presence     Recent In     Thin Muc	t (B11) Ist (B12) Ivertebrate Sulfide Od Rhizosphe of Reduce on Reducti k Surface (	dor (C1) res along d Iron (C4 on in Tille C7)	4)	<u>Seco</u> <u>Seco</u> <u>Seco</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u>	andary Indicators (2 or more require 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 Shallow Aquitard (D3)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (N Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks Inundation Visible o Water-Stained Leav Field Observations:	num of one rec 12) (B2) (Nonriver Nonriverine) (B6) n Aerial Imager es (B9)	ine) ry (B7)	Salt Crust Biotic Crust Aquatic Ir Hydrogen Oxidized Presence Recent In Thin Muct Other (Ex	t (B11) Ist (B12) Ivertebrate Sulfide Od Rhizosphe of Reduce on Reducti k Surface ( plain in Re	dor (C1) res along d Iron (C4 on in Tille C7)	4)	<u>Seco</u> <u>Seco</u> <u>Seco</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u>	andary Indicators (2 or more require 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 Shallow Aquitard (D3)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks Inundation Visible of Water-Stained Leav Field Observations: Surface Water Present?	num of one rec 2) (Bonriverine) (B2) (Nonriver Nonriverine) (B6) n Aerial Imagei es (B9) Yes	ine) ry (B7) No	Salt Crust Biotic Crust Aquatic Ir Hydrogen Oxidized Presence Recent In Thin Muct Other (Ex	t (B11) Ist (B12) Ivertebrate Sulfide Od Rhizosphe of Reduce on Reducti k Surface ( plain in Re	dor (C1) res along d Iron (C4 on in Tille C7) marks)	l) d Soils (C6	<u>Seco</u> <u>Seco</u> <u>Seco</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u> <u>S</u>	andary Indicators (2 or more require 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 Shallow Aquitard (D3)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks Inundation Visible or Water-Stained Leav Field Observations: Surface Water Present? Water Table Present?	num of one rec 1/2) 1/0nriverine) (B2) (Nonriver Nonriverine) (B6) n Aerial Image res (B9) Yes Yes	ine) ry (B7) No No	Salt Cruss Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent In Thin Muc Other (Ex Bepth (ir Depth (ir	t (B11) st (B12) ivertebrate s Sulfide Od Rhizosphe of Reduce of Reduce on Reducti k Surface ( plain in Re- nches):	dor (C1) res along ad Iron (C4 on in Tille C7) smarks)	4) d Soils (C6	<u>Seco</u>  Seco  S I S 	Andary Indicators (2 or more require 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 Shallow Aquitard (D3) FAC-Neutral Test (D5)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks Inundation Visible of Water-Stained Leav Field Observations: Surface Water Present?	num of one rec 12) 10nriverine) (B2) (Nonriver Nonriverine) (B6) n Aerial Image es (B9) Yes Yes Yes	ine) ry (B7) No No	Salt Crust Biotic Crust Aquatic Ir Hydrogen Oxidized Presence Recent In Thin Muct Other (Ex	t (B11) st (B12) ivertebrate s Sulfide Od Rhizosphe of Reduce of Reduce on Reducti k Surface ( plain in Re- nches):	dor (C1) res along ad Iron (C4 on in Tille C7) smarks)	4) d Soils (C6	<u>Seco</u>  Seco  S I S 	andary Indicators (2 or more require 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 Shallow Aquitard (D3)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks Inundation Visible or Water-Stained Leav Field Observations: Surface Water Present? Water Table Present? Saturation Present?	num of one rec 1/2) 1/0nriverine) (B2) (Nonriver Nonriverine) (B6) n Aerial Imager (B9) Yes Yes Yes )	ine) ry (B7) No No _	Salt Cruss Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent In Thin Muc Other (Ex Bepth (ir Depth (ir Depth (ir	t (B11) st (B12) ivertebrate Sulfide Od Rhizosphe of Reduce of Reduce on Reducti k Surface ( plain in Re- nches): nches):	dor (C1) res along od Iron (C4 on in Tille C7) smarks)	4) d Soils (C6  Wett	<u>Seco</u>  S	Andary Indicators (2 or more require 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 Shallow Aquitard (D3) FAC-Neutral Test (D5)
Remarks: YDROLOGY Wetland Hydrology Ind Primary Indicators (minir Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) (M Sediment Deposits (B3) ( Drift Deposits (B3) ( Surface Soil Cracks Inundation Visible of Water-Stained Leav Field Observations: Surface Water Present? Water Table Present? Saturation Present? Saturation Present?	num of one rec 1/2) 1/0nriverine) (B2) (Nonriver Nonriverine) (B6) n Aerial Imager (B9) Yes Yes Yes )	ine) ry (B7) No No _	Salt Cruss Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent In Thin Muc Other (Ex Bepth (ir Depth (ir Depth (ir	t (B11) st (B12) ivertebrate Sulfide Od Rhizosphe of Reduce of Reduce on Reducti k Surface ( plain in Re- nches): nches):	dor (C1) res along od Iron (C4 on in Tille C7) smarks)	4) d Soils (C6  Wett	<u>Seco</u>  S	Andary Indicators (2 or more require 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 Shallow Aquitard (D3) FAC-Neutral Test (D5)

oject/site: KZ Freehold		City/County	<u>.                                    </u>	ナイトム	Sampling Date:	2-17
nlicant/Owner:				State:A	Sampling Point:	DP#
vestigator(s):Ed Sewell		Section, To	wnship, Ran	ge: 531 T	IGN RIG	E
ndform (hillslope, terrace, etc.):						
ibregion (LRR):						
bil Map Unit Name:			· ·	NWI classifi		
e climatic / hydrologic conditions on the site typical fo	r this time of ve	ar? Vec				
re Vegetation, Soil, or Hydrology	-			lormal Circumstances"	•	/ No
re Vegetation, Soil, or Hydrology						NO
			•	ided, explain any answ	,	
UMMARY OF FINDINGS – Attach site m	ap showing	samplin	g point lo	cations, transect	s, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes	No					
	No	1	e Sampled		No	
	No	with	in a Wetland	? Yes	No	
Remarks:		l		·····		
EGETATION - Use scientific names of p	lants.					
	Absolute			Dominance Test wor	ksheet:	
Free Stratum (Plot size:)	% Cover			Number of Dominant S		3
l				That Are OBL, FACW,	or FAC:	(A)
2 3				Total Number of Domi		3
4.				Species Across All Str		<b>/</b> (B)
		= Total Co	ver	Percent of Dominant S That Are OBL, FACW,		(A/B)
Sapling/Shrub Stratum (Plot size:)					·····	(AVD)
1				Prevalence index wo		
3				Total % Cover of: OBL species		ly by:
۰ ۱				FACW species		
)					x3=	
		= Total Co	ver	FACU species		
			FNW	UPL species		
	1 1			Column Totals:	(A)	(B)
Cartx 300	- 60				······································	
Jureus Buitreys	49		PALW	Prevalence Index		
Corres 3pp Jurius Bultreys Porippu spp	20		PALW OTL		< = B/A =	
Corres 3pp Jureus Builtreys 3. Porippu spp	20		PHU DOL	Hydrophytic Vegetati	< = B/A = on Indicators:	
Conte 3pp Jurius Builtreus Rorippen app	<u>40</u> zv				<pre>&lt; = B/A = on Indicators: </pre>	
Course 3pp Jurius Buitreus 3. Poripper 900			<u>Ржи</u> Одг 	Hydrophytic Vegetati Dominance Test is 	≤ = B/A =	supporting
1. Conta 3pp 2. Junius Buitreys 3. Poripper epp 4.			<u>Pmu</u> opl	Hydrophytic Vegetati Dominance Test is Prevalence Index Morphological Ada data in Remark	c = B/A = on Indicators: 3 >50% is ≤3.0 <sup>1</sup> aptations <sup>1</sup> (Provide s or on a separate	sheet)
1. Corre 300 2. Junius Buitreys 3. Porippen 900 4.				Hydrophytic Vegetati Dominance Test is 	c = B/A = on Indicators: 3 >50% is ≤3.0 <sup>1</sup> aptations <sup>1</sup> (Provide s or on a separate	sheet)
Contx     3 pp       2.     Jurius       3.     Jori pp       4.				Hydrophytic Vegetati 'Dominance Test is Prevalence Index Morphological Ada data in Remark Problematic Hydro	≤ = B/A = on Indicators: a>50% is ≤3.0 <sup>1</sup> aptations <sup>1</sup> (Provide s or on a separate ophytic Vegetation <sup>1</sup>	e sheet) <sup>1</sup> (Explain)
1.     Cortx 3pp       2.     Jurius Buitreys       3.     Poripper Spin       4.		= Total Co		Hydrophytic Vegetati Dominance Test is Prevalence Index Morphological Ada data in Remark	≤ = B/A = on Indicators: a>50% is ≤3.0 <sup>1</sup> aptations <sup>1</sup> (Provide s or on a separate ophytic Vegetation <sup>1</sup> il and wetland hyd	e sheet) <sup>1</sup> (Explain) rology must
Herb Stratum       (Plot size:)         1.		= Total Co	<u>Ржи</u> оде	Hydrophytic Vegetati Dominance Test is Prevalence Index Morphological Ada data in Remark Problematic Hydro Indicators of hydric so be present, unless dist	≤ = B/A = on Indicators: a>50% is ≤3.0 <sup>1</sup> aptations <sup>1</sup> (Provide s or on a separate ophytic Vegetation <sup>1</sup> il and wetland hyd	e sheet) <sup>1</sup> (Explain) rology must
1.     Cortx 3pp       2.     Jurius Buitreys       3.     Poripper Spin       4.		= Total Cor	F#(w)           OBL           OBL           Wer           Wer	Hydrophytic Vegetati VDominance Test is Prevalence Index Morphological Ada data in Remark Problematic Hydro <sup>1</sup> Indicators of hydric so be present, unless dist Hydrophytic Vegetation	≤ = B/A = on Indicators: a>50% is ≤3.0 <sup>1</sup> aptations <sup>1</sup> (Provide s or on a separate ophytic Vegetation <sup>1</sup> il and wetland hyd	e sheet) <sup>1</sup> (Explain) rology must rtic.

Color (motel)       %       Color (motel)       %       Toxe       Color (motel)       %       Toxe       %		aprior. (Describe to the depth)		Sampling Point: $\underline{\mathcal{P}}^{\mathcal{P}}$
Image:	)epth			Tathan Davida
//4       //2       //2       //2         //4       //2       //2       //2         //4       //2       //2       //2         //4       //2       //2       //2         //4       //2       //2       //2         //4       //2       //2       //2         //4       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         //2       //2       //2       //2         /2       //2       //2       //2         /2       //2	nones)			oc rexure Remarks
	<u> </u>			- STAR RUEY
rdrfc Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>2</sup> :         Histoc Epipedon (A2)       Sandy Redox (S5)       1 cm Muck (A9) (LRR C)         Histoc Epipedon (A2)       Stripped Matrix (S6)       2 cm Muck (A0) (LRR C)         Black Histic (A3)       Loamy Gleyed Matrix (F2)       Red Parent Material (TF2)         Stratified Layers (A5) (LRR C)       Depleted Matrix (F2)       Red Parent Material (TF2)         Objected Elox Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         1 cm Muck (A9) (LRR D)       -Kedox Dark Surface (F7)       Thick Dark Surface (A12)       Redox Depressions (F8)         Sandy Gleyed Matrix (S4)       unless disturbed or problematic.       stripted Watrix (S4)       unless disturbed or problematic.         stripted Watrix (S4)       unless disturbed or problematic.       methods       No         Depth (Inches):	14	<u>/0 n 7/1</u>	<u> </u>	cobby on
idde Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>2</sup> :         Histosoi (A1)				
dric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls*:         Histos Epipedon (A2)       Sandy Redox (S5)       or Muck (A9) (LRR C)         Histos Epipedon (A2)       Stripped Matrix (S6)       or Muck (A9) (LRR C)         Black Histis (A3)				
drdr Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>2</sup> :         Histocol (A1)				
pdrb Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         pdistosol (A1)	 ype: C=Co	ncentration, D=Depletion, RM=Re	educed Matrix, CS=Covered or Coated S	and Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2)       Stripped Matrix (S6)       2 cm Muck (A10) (LRR 6)         Black Histic (A3)       Loarry Mucky Mineral (F1)       Red Unced Vertic (F18)         Hydrogen Sulfide (A4)       Loarry Mucky Mineral (F2)       Red Parent Material (TF2)         Strattfied Layers (A5) (LRR C)       Depleted Matrix (F2)       Red Parent Material (TF2)         I om Muck (A9) (LRR D)				
Black Histic (A3)       Loamy Mucky Mineral (F1)       Reduced Vertic (F16)         Hydrogen Suffide (A4)       Loamy Gleyed Matrix (F2)       Red Parent Material (TF2)         Strattled Layers (A5) (LRR C)       Depieted Matrix (F3)       Other (Explain in Remarks)         1 om Muck (A9) (LRR D)       Redox Dark Surface (F6)				1 cm Muck (A9) (LRR C)
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Red Parent Material (TF2)         Stretified Layers (A5) (LRR C)       Depieted Matrix (F3)       Other (Explain in Remarks)         1 om Muck (A9) (LRR D)				
Strettfield Layers (A5) (LRR C)	_	• •		, , ,
1 cm Muck (A9) (LRR D)				
Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)         Thick Dark Surface (A12)       Redox Depressions (F8)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1)       Vernal Pools (F9)       wetland hydrology must be present, unless disturbed or problematic.         Sandy Gleyed Matrix (S4)       unless disturbed or problematic.       No         Depth (inches):       hydric Soil Present? Yes       No         gmarks:       Depth (inches):       Hydric Soil Present? Yes       No         Surface Water (A1)       Salt Crust (B11)       Water Marks (B1) (Riverine)       Secondary Indicators (2 or more required)         Surface Water (A1)       Salt Crust (B11)       Water Marks (B1) (Riverine)       Secondary Indicators (2 or more required)         Surface Water (A1)       Salt Crust (B11)       Water Marks (B1) (Riverine)       Secondary Indicators (2 or more required)         Surface Water (A1)       Salt Crust (B12)       Sediment Deposits (B2) (Riverine)       Secondary Indicators (2 or more required)         Vater Marks (B1) (Nonriverine)       Presence of Reduced Iron (C1)       Drainage Patternes (B10)       Secondary Indicators (2 or more required)         Surface Soil Cracks (B6)       Recent Iron Reduction in Tilled Soils (C6)       Saturation Visible on Aerial Imagery (C2)         Orther Cracks (B6)				Other (Explain in Remarks)
Thick Dark Surface (A12)       Redox Depressions (F8) <sup>3</sup> Indicators of hydrophytic vegetation and welland hydrology must be present, unless disturbed or problematic.         Sandy Gleyed Matrix (S4)       unless disturbed or problematic.         strictive Layer (if present):       unless disturbed or problematic.         Type:				
Sandy Mucky Mineral (S1)       Vernal Pools (F9)       wetland hydrology must be present, unless disturbed or problematic.         Sandy Gleyed Matrix (S4)       unless disturbed or problematic.         Type:		· · ·		<sup>S</sup> Indicators of hydrophytic vocatation and
Sandy Gleyed Matrix (54)       unless disturbed or problematic.         strictive Layer (if present):       Type:         Type:	-			
strictive Layer (if present):         Type:         Depth (inches):	-	-		
Type:				
Depth (Inches):				
armarks:         DROLOGY         ettand Hydrology Indicators:         imary Indicators (minimum of one required: check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Salt Crust (B11)       Water Marks (B1) (Riverine)         Migh Water Table (A2)       Biotic Crust (B12)       Sediment Deposits (B2) (Riverine)         Saturation (A3)       Aquatic Invertebrates (B13)       Dirit Deposits (B2) (Riverine)         Water Marks (B1) (Nonriverine)       Hydrogen Suffde Odor (C1)       Drainage Patterns (B10)         Sediment Deposits (B2) (Nonriverine)       Oxidized Rhizospheres along Living Roots (C3)       Dry-Seeson Water Table (C2)         Drift Deposits (B3) (Nonriverine)       Oxidized Rhizospheres along Living Roots (C3)       Dry-Seeson Water Table (C2)         Drift Deposits (B3) (Nonriverine)       Presence of Reduced Iron (C4)       Crayfish Burrows (C8)         Surface Soil Cracks (B6)       Recent Iron Reduction in Tilled Soils (C6)       Saturation Visible on Aerial Imagery (C2)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Shallow Aquitard (D3)         Water Table Present?       Yes       No       Depth (inches):         Information Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Shallow Aquitard (D3)         Intract Water Present?       Yes       No <td>IVDE:</td> <td></td> <td></td> <td></td>	IVDE:			
DROLOGY         etland Hydrology Indicators:         imary Indicators (minimum of one required: check all that apply)       Secondary Indicators (2 or more required)	•••••••			Hydric Soll Present? Yes No
ettand Hydrology Indicators:       Secondary Indicators (2 or more required)	Depth (inc			Hydric Soll Present? Yes No
imary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	Depth (inc emarks:	hes):		Hydric Soli Present? Yes No
Surface Water (A1)	Depth (inc emarks: DROLO(	hes):		Hydric Soll Present? Yes No
High Water Table (A2)	Depth (inc emarks: DROLOO etiand Hyd	hes): 3Y rology Indicators:		
Saturation (A3)	Depth (inc emarks: DROLOO etland Hyd imary Indica	hes): GY irology Indicators: ators (minimum of one required: c	heck all that apply)	Secondary Indicators (2 or more required)
Water Marks (B1) (Nonriverine)       Hydrogen Sulfide Odor (C1)       Drainage Patterns (B10)         Sediment Deposits (B2) (Nonriverine)       Oxidized Rhizospheres along Living Roots (C3)       Dry-Season Water Table (C2)         Drift Deposits (B3) (Nonriverine)       Presence of Reduced Iron (C4)       Crayfish Burrows (C8)         Surface Soil Cracks (B6)       Recent Iron Reduction in Tilled Soils (C6)       Saturation Visible on Aerial Imagery (C9)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Shallow Aquitard (D3)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       FAC-Neutral Test (D5)         eld Observations:       Depth (inches):       Mo         ater Table Present?       Yes       No       Depth (inches):         Includes capillary fringe)       Yes       No       Depth (inches):         Saturation Present?       Yes       No       Depth (inches):         Saturation Present?       Yes       No       Depth (inches):       No         Saturation Present?       Yes       No       Depth (inches):       No       No         Saturation Present?       Yes       No       Depth (inches):       No       No       No         Saturation Present?       Yes       No       Depth (inches):       No       No	Depth (inc emarks: DROLOC etland Hyd imary Indica Surface V	hes): GY irology Indicators: ators (minimum of one required: c Water (A1)		Secondary Indicators (2 or more required) Water Marks (B1) (Riverine)
Sediment Deposits (B2) (Nonriverine)       Oxidized Rhizospheres along Living Roots (C3)       Dry-Season Water Table (C2)         Drift Deposits (B3) (Nonriverine)       Presence of Reduced Iron (C4)       Crayfish Burrows (C8)         Surface Soil Cracks (B6)       Recent Iron Reduction in Tilled Soils (C6)       Saturation Visible on Aerial Imagery (C9         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Shallow Aquitard (D3)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       FAC-Neutral Test (D5)         eld Observations:       Depth (inches):       Depth (inches):         ater Table Present?       Yes       No       Depth (inches):         Includes capillary fringe)       No       Depth (inches):       Wetland Hydrology Present?         Saturation Present?       Yes       No       Depth (inches):       No         Includes capillary fringe)       Depth (aerial photos, previous inspections), if available:       No       No	Depth (inc omarks: DROLOC etland Hyd imary Indica _ Surface V _ High Wat	hes): GY irology Indicators: ators (minimum of one required: c Water (A1) ier Table (A2)		
<ul> <li>Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8)</li> <li> Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3)</li> <li> Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5)</li> <li>ald Observations:</li> <li> ater Table Present? Yes No Depth (inches):</li> <li> Mo Depth (inches):</li> <li> Wetland Hydrology Present? Yes No Depth (inches):</li> <li> Mo Depth (inches):</li></ul>	Depth (inc amarks: DROLOC etland Hyd imary Indica Surface V High Wat Saturatio	hes): GY rology Indicators: ators (minimum of one required: c Nater (A1) ter Table (A2) n (A3)	<u>heck all that apply)</u> Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13)	
Surface Soil Cracks (B6)Recent Iron Reduction in Tilled Soils (C6)Saturation Visible on Aerial Imagery (C9	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface Ma ingh Wat Saturatio Water Ma	hes): GY irology Indicators: ators (minimum of one required; c Nater (A1) ter Table (A2) n (A3) arks (B1) (Nonriverine)	<u>heck all that apply)</u> Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	
_ Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) _ Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) eld Observations: 	Depth (inc emarks: DROLOO etland Hyd imary Indica _ Surface V _ High Wat _ Saturatio _ Water Ma _ Sediment	hes): <b>GY</b> <b>irology Indicators:</b> ators (minimum of one required; c Nater (A1) ter Table (A2) n (A3) arks (B1) (Nonriverine) t Deposits (B2) (Nonriverine)	heck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livi	<u>Secondary Indicators (2 or more required)</u> Water Marks (B1) ( <b>Riverine</b> ) Sediment Deposits (B2) ( <b>Riverine</b> ) Drift Deposits (B3) ( <b>Riverine</b> ) Drainage Patterns (B10) mg Roots (C3) Dry-Season Water Table (C2)
	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep	hes): Fology Indicators: ators (minimum of one required; c Nater (A1) ter Table (A2) n (A3) arks (B1) (Nonriverine) t Deposits (B2) (Nonriverine) osits (B3) (Nonriverine)	heck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livie Presence of Reduced Iron (C4)	<u>Secondary Indicators (2 or more required)</u> Water Marks (B1) ( <b>Riverine</b> ) Sediment Deposits (B2) ( <b>Riverine</b> ) Drift Deposits (B3) ( <b>Riverine</b> ) Drainage Patterns (B10) mg Roots (C3)Dry-Season Water Table (C2) Crayfish Burrows (C8)
eld Observations:         urface Water Present?       Yes No Depth (inches):         ater Table Present?       Yes No Depth (inches):         aturation Present?       Yes No         aturation Present?       Yes No         acturation Present?       Yes	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V High Wate Saturatio Water Ma Sediment Drift Dep Surface S	hes): Fology Indicators: ators (minimum of one required; c Nater (A1) ter Table (A2) n (A3) arks (B1) (Nonriverine) t Deposits (B2) (Nonriverine) t Deposits (B2) (Nonriverine) Soils (B3) (Nonriverine) Soil Cracks (B6)	heck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livit Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So	
<pre>urface Water Present? Yes No Depth (inches): ater Table Present? Yes No Depth (inches): aturation Present? Yes No aturation Present? Yes No Depth (inches): No aturation Present? Yes No Depth (inches): No NO</pre>	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V Saturatio Water Ma Saturatio Unift Dep Surface S Inundatio	hes): Fology Indicators: ators (minimum of one required: c Nater (A1) ter Table (A2) n (A3) arks (B1) (Nonriverine) t Deposits (B2) (Nonriverine) osits (B3) (Nonriverine) Soil Cracks (B6) in Visible on Aerial Imagery (B7)	heck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livii Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7)	
ater Table Present? YesNo Depth (inches): aturation Present? YesNo Depth (inches): Wetland Hydrology Present? YesNo icludes capillary fringe) ascribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V Saturatio Water Ma Sediment Drift Dep Surface S Inundatio Water-St	hes): GY rology Indicators: ators (minimum of one required: c Nater (A1) ter Table (A2) n (A3) arks (B1) (Nonriverine) t Deposits (B2) (Nonriverine) osits (B3) (Nonriverine) Soil Cracks (B6) in Visible on Aerial Imagery (B7) ained Leaves (B9)	heck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livii Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7)	
aturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Icludes capillary fringe) ascribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Surface S Inundatio Water-St eld Observ	hes): <b>GY</b> <b>rology Indicators:</b> <b>ators (minimum of one required: c</b> <b>Nater (A1)</b> ter Table (A2) n (A3) <b>arks (B1) (Nonriverine)</b> <b>t Deposits (B2) (Nonriverine)</b> <b>t Deposits (B3) (Nonriverine)</b> <b>soits (B3) (Nonriverine)</b> <b>soit Cracks (B6)</b> <b>in Visible on Aerial Imagery (B7)</b> <b>ained Leaves (B9)</b> <b>rations:</b>	Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livit Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks)	
cludes capillary fringe) ascribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V High Wat Saturatio Water Ma Saturatio Unift Dep Surface S Inundatio Water-St eld Observ unface Water	hes):	check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livia Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches):	
	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V High Wat Saturatio Water Ma Saturatio Unift Dep Surface S Inundatio Water-St eld Observ urface Water	hes):	check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livia Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches):	
amarks:	Depth (inc emarks: DROLOO etland Hyd imary Indica Surface V High Wat Saturatio Water Ma Saturatio Drift Dep Surface S Inundatio Water-St eld Observ urface Wate faturation Pro	hes):	check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livil Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sc Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches):	Secondary Indicators (2 or more required)        Water Marks (B1) (Riverine)        Sediment Deposits (B2) (Riverine)        Drift Deposits (B3) (Riverine)        Drift Deposits (B3) (Riverine)        Drainage Patterns (B10)         ng Roots (C3)      Dry-Season Water Table (C2)        Crayfish Burrows (C8)         poils (C6)      Saturation Visible on Aerial Imagery (C9)        Shallow Aquitard (D3)        FAC-Neutral Test (D5)
	Depth (inc emarks: DROLOO lettand Hyd imary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Surface S Inundatio Water St eld Observ Vurface Wate faturation Pro- ncludes cap	hes):	check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livia Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches):	Secondary Indicators (2 or more required)
	Depth (inc emarks: /DROLOO /etland Hyd rimary Indica Surface V High Wate Saturatio Water Ma Sediment Sediment Sediment Sediment Sediment Sediment Surface S Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Water-St Inundatio Reserver St Inundatio Reserver St Inundatio Reserver St Inundatio Reserver St Inundatio Reserver St Reserver St Inundatio Reserver St Inundatio Reserver St Reserver St 	hes):	check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livia Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches):	Secondary Indicators (2 or more required)
	Depth (inc emarks: /DROLOO /etland Hyd /imary Indica 	hes):	check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livia Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches):	Secondary Indicators (2 or more required)

Project/Site: <u> </u>	Fruhold	City/Coun	ty: Krttitas	Sampling Date: 3 - 4/-
Applicant/Owner:			State:	Sampling Date: 3 · 4/- WA Sampling Point: DP# 531 TI9N RI9E
				): Slope (%):
Subregion (LRR):		Lat:	Long:	Datum:
Soil Map Unit Name:	Varrens		· ł	WI classification:
Are Vegetation, Soil		··· •		mstances" present? Yes No
Are Vegetation, Soil SUMMARY OF FINDING				transects, important features, et

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

.

Tree Stratum         (Plot size:)           1        )			Status	Dominance Test worksheet:           Number of Dominant Species           That Are OBL, FACW, or FAC:	<b>3</b> (A)
2 3				Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
4		<b>T</b>	ver	Percent of Dominant Species That Are OBL, FACW, or FAC:	(A/B)
1				Prevalence Index worksheet:	
2				Total % Cover of: Mult	iply by:
3				OBL species x 1 =	
4				FACW species x 2 =	
5			*****	FAC species x 3 =	
······································		= Total Co	Ver	FACU species x4 =	
Herb Stratum (Plot size:)		•		UPL species x 5 =	
1. CNEX Spp.	60		FINW	Column Totals: (A)	
2. Jourippin epp. 3. Junes bullion	20		0132		(0)
3. Junels bullion	20		Figure	Prevalence Index = B/A =	
4				Hydropbytic Vegetation Indicators:	
5				Dominance Test is >50%	
6				Prevalence Index is ≤3.0 <sup>1</sup>	
				Morphological Adaptations <sup>1</sup> (Provid	de supporting
7				data in Remarks or on a separa	
8				Problematic Hydrophytic Vegetatio	on <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size:)	<u></u>	= Total Co	ver		
1				<sup>1</sup> Indicators of hydric soil and wetland hy	vdrology must
2				be present, unless disturbed or problem	
4. <u> </u>		= Total Co		Hydrophytic	,
		-		Vegetation	
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust		Present? Yes No	
Remarks:					

Sampling Point: \_\_\_\_\_\_

Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type <sup>1</sup> Lo	c <sup>2</sup> Remarks
16 16 92 211	Fen for Funt	
Type: C=Concentration, D=Depletion, RM	=Reduced Matrix, CS=Covered or Coated Sa	nd Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
lydric Soll indicators: (Applicable to all		Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Strattfied Layers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	<u> </u>
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)		unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		
Depth (inches):		Hydric Soil Present? Yes No
Remarks:		

Primary Indicators (minimum of one required; ch	eck all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
Ligh Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livin	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Sc	ils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	,	
Surface Water Present? Yes No	Depth (inches):	
Water Table Present? YesNo	Depth (inches):	
Saturation Present? Yes <u>Ves</u> No_ (includes capillary fringe)	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitor	ing well, aerial photos, previous inspec	tions), if available:
Remarks:	*****	

K7 Fauladel		N DATA FORM	rttitas		2-4-
pplicant/Owner:			State: WA	Sampling Point:	<u></u>
andform (hillslope, terrace, etc.):					
Ibregion (LRR):	Lat:		Long:	Datum	:
bil Map Unit Name:			NWI class	sification:	
e climatic / hydrologic conditions on the site typical	for this time of year	? Yes 📝 No	(If no, explain i	n Remarks.)	_
e Vegetation, Soil, or Hydrology	significantly di	isturbed? Are	"Normal Circumstance	s" present? Yes 🧹	_ No
e Vegetation, Soil, or Hydrology	naturally prob	lematic? (If r	needed, explain any ans	wers in Remarks.)	
UMMARY OF FINDINGS - Attach site r	nap showing s				tures, etc
Hydrophytic Vegetation Present? Yes	No V				,
Hydric Soil Present? Yes		is the Sample		/	
Wetland Hydrology Present? Yes		within a Wetla	and? Yes	No	
Remarks:					
EGETATION – Use scientific names of	-				
Free Stratum (Plot size: )		Dominant Indicator Species? Status			
·			<ul> <li>Number of Dominan</li> <li>That Are OBL, FAC</li> </ul>		(A)
2					
3.			<ul> <li>Total Number of Do</li> <li>Species Across All S</li> </ul>		(B)
4.					
	,	Total Cover	Percent of Dominan	t Species	
			That Are OBL. FAC	N. or FAC: 📿	(A/B)
	)		That Are OBL, FAC		(A/B)
I			Prevalence Index v	vorksheet:	
l			Prevalence Index v	vorksheet: of: Multiply	by:
			Prevalence index v Total % Cover c OBL species	vorksheet: <u>Multiply</u> x 1 =	by:
l			Prevalence Index v Total % Cover of OBL species FACW species	vorksheet: <u></u>	by:
			Prevalence Index v         Total % Cover of         OBL species         FACW species         FAC species	vorksheet:         Multiply           x1 =	by:
I		= Total Cover	Prevalence index v         Total % Cover of         OBL species         FACW species         FAC species         FACU species	vorksheet:           of:         Multiply           x 1 =         x           x 2 =         x           x 3 =         x           x 4 =         x	by:
lerb Stratum (Plot size:) B) B) B		= Total Cover	Prevalence Index v         Total % Cover c         OBL species         FACW species         FAC species         FACU species         UPL species	vorksheet:           of:         Multiply           x 1 =            x 2 =            x 3 =            x 4 =            x 5 =	by:
Herb Stratum (Plot size:) Bronus futorum		= Total Cover	Prevalence Index v         Total % Cover of         OBL species         FACW species         FAC species         FACU species         UPL species         Column Totals:	vorksheet:           of:         Multiply           x 1 =            x 2 =            x 3 =            x 4 =            x 5 =	<u>by:</u>
lerb Stratum (Plot size:) Bromus tuto run		= Total Cover	Prevalence Index v         Total % Cover of         OBL species         FACW species         FAC species         FACU species         UPL species         Column Totals:         Prevalence Ince	vorksheet:         Multiply           x 1 =	<u>by:</u>
lerb Stratum (Plot size:) ) 		= Total Cover	Prevalence Index v         Total % Cover of         OBL species         FACW species         FAC species         FACU species         UPL species         Column Totals:         Prevalence Inc         Hydrophytic Veget	vorksheet:       Multiply         x 1 =	<u>by:</u>
lerb Stratum (Plot size:) Bromus tuto run		= Total Cover	Prevalence Index v         Total % Cover of         OBL species         FACW species         FAC species         FACU species         UPL species         Oolumn Totals:         Prevalence Inc         Hydrophytic Veget         Dominance Tes	vorksheet:       Multiply         x 1 =	<u>by:</u>
1.		= Total Cover	Prevalence Index v         Total % Cover of         OBL species         FACW species         FACU species         UPL species         Column Totals:         Prevalence Index         Hydrophytic Veget         Dominance Tes         Prevalence Index	worksheet:       Multiply         x 1 =       x         x 2 =       x         x 3 =       x         x 4 =       x         x 5 =       (A)         dex = B/A =       x         ation indicators:       t is >50%         bx is <3.0 <sup>1</sup> x	<u>by:</u> (B)
1.	<u> </u>	= Total Cover	Prevalence Index v         Total % Cover of         OBL species         FACW species         FAC species         FAC species         UPL species         Olumn Totals:         Prevalence Index         Hydrophytic Veget         Dominance Tes         Prevalence Index         Morphological A	vorksheet:       Multiply         x 1 =	by:
1.		= Total Cover	Prevalence Index w         Total % Cover of         OBL species         FACW species         FAC species         FACU species         UPL species         Column Totals:         Prevalence Ince         Hydrophytic Veget         Dominance Tes         Prevalence Ince         Morphological A         data in Remain	worksheet:       Multiply         x 1 =       x         x 2 =       x         x 3 =       x         x 4 =       x         x 5 =       (A)         dex = B/A =       x         ation indicators:       t is >50%         ex is <3.01	upporting heet)
1.		= Total Cover	Prevalence Index w         Total % Cover of         OBL species         FACW species         FAC species         FACU species         UPL species         Column Totals:         Prevalence Ince         Hydrophytic Veget         Dominance Tes         Prevalence Ince         Morphological A         data in Remain	vorksheet:       Multiply         x 1 =       x         x 2 =       x         x 3 =       x         x 4 =       x         x 5 =       x         (A)       x         iex = B/A =       x         ation indicators:       x         t is >50%       x         ex is <3.01	upporting heet)
1.		= Total Cover	Prevalence Index w Total % Cover of OBL species FACW species FAC species FACU species UPL species UPL species UPL species UPL species UPL species UPL species Deminance Index Hydrophytic Veget Dominance Tes Prevalence Index Morphological A data in Rema Droblematic Hydr Indicators of hydric	vorksheet:       Multiply         x 1 =       x         x 2 =       x         x 3 =       x         x 4 =       x         x 5 =       x         (A)       x         dex = B/A =       x         ation Indicators:       x         t is >50%       x         ex is <3.01	upporting heet) Explain)
Sapling/Shrub Stratum       (Plot size:)         1.		= Total Cover	Prevalence Index w Total % Cover of OBL species FACW species FAC species FACU species UPL species UPL species UPL species UPL species UPL species UPL species Deminance Index Hydrophytic Veget Dominance Tes Prevalence Index Morphological A data in Rema Droblematic Hydr Indicators of hydric	vorksheet:       Multiply         x 1 =       x         x 2 =       x         x 3 =       x         x 4 =       x         x 5 =       x         (A)       x         dex = B/A =       x         ation Indicators:       t         t is >50%       sx is <3.01	upporting heet) Explain)
1.		= Total Cover 	Prevalence Index v Total % Cover of OBL species FACW species FAC species FAC species UPL species Column Totals: Prevalence Inde Hydrophytic Veget Dominance Tes Prevalence Inde Morphological A data in Rema Problematic Hyt Indicators of hydric be present, unless d Hydrophytic Vegetation	vorksheet:       Multiply         x 1 =       x         x 2 =       x         x 3 =       x         x 4 =       x         x 5 =       x         (A)       x         dex = B/A =       x         ation Indicators:       x         t is >50%       x         ex is <3.01	by: by: (B) upporting heet) Explain) logy must 2.

Sampling Point: \_\_\_\_\_\_\_

				····				Sampling Fount.		
Profile Desc	ription: (Describe to	the depth	needed to docu	nent the in	idicator o	or confirm	the absence	e of indicators.)		
Depth	Matrix			x Features						
(inches)	Color (moist)		Color (moist)	<u>%</u>	Type'	_Loc <sup>*</sup>	Texture	Remarks		
16	104h 3/3						936			
				•		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			
			·····							
						·····				
				·						
	ncentration, D=Deple	tion RM=R	educed Matrix C	 S=Covered	or Coste	d Sand Gr	aine <sup>2</sup> i c	ocation: PL=Pore Lining, M=Matrix.		
	ndicators: (Applical					u Ganu Gra		s for Problematic Hydric Soils <sup>3</sup> :		
Histosol			Sandy Red					•		
	hipedon (A2)		Stripped Ma					Muck (A9) (LRR C)		
Black Hi	• • •		Loamy Mud	• •	(F1)			Muck (A10) (LRR B) Iced Vertic (F18)		
	n Sulfide (A4)		Loamy Gle	•	• •			Parent Material (TF2)		
	Layers (A5) (LRR C)		Depleted M		(•)			r (Explain in Remarks)		
	ck (A9) (LRR D)		Redox Darl	• •	F6)		-morbos	(		
	Below Dark Surface	(A11)	Depleted D	•	,					
Thick Da	irk Surface (A12)		Redox Depressions (F8)				<sup>3</sup> Indicators of hydrophytic vegetation and			
Sandy M	lucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present,			
Sandy G	leyed Matrix (S4)						unless	disturbed or problematic.		
Restrictive L	ayer (if present):						1			
Type:										
Depth (inc	ches):						Hydric So	Il Present? Yes No		
Remarks:							<u> </u>			
								· · · · · · · · · · · · · · · · · · ·		
HYDROLO	GY									
Wetland Hyd	irology indicators:									
Primary Indic	ators (minimum of on	e required; (	check all that app	V)			Seco	ondary Indicators (2 or more required)		
	Water (A1)		Salt Crust					Water Marks (B1) (Riverine)		
	ter Table (A2)		Biotic Cru					Sediment Deposits (B2) (Riverine)		
Saturatio		Aquatic Invertebrates (B13)					Drift Deposits (B3) (Riverine)			
	arks (B1) (Nonriverin	Hydrogen Sulfide Odor (C1)					Drainage Patterns (B10)			
	it Deposits (B2) (Noni				• •	iving Roo		Dry-Season Water Table (C2)		
	osits (B3) (Nonriveri	•	Oxidized Rhizospheres along Living Root Presence of Reduced Iron (C4)					Crayfish Burrows (C8)		
	Soil Cracks (B6)	iie)	Recent Iron Reduction in Tilled Soils (C6)					- , ,		
	on Visible on Aerial Im	agen (P7)						Saturation Visible on Aerial Imagery (C9)		
	tained Leaves (B9)	agery (Dr)		CSurface (C				Shallow Aquitard (D3)		
Field Obser				plain in Rer	nains)			FAC-Neutral Test (D5)		
Surface Wate		s No								
Water Table		s No		Depth (inches):						
Saturation Pr		s No	Depth (in	ches):		_ Wetla	and Hydrolog	gy Present? Yes No		
(includes cap Describe Rec	corded Data (stream g	aude moni	toring well serial	nhotos pre	Vinue ine	nections)	if available <sup>.</sup>			
	and a series and the second		wing non, dond	prioros, pro		poolionaj, i	a avanavic.			

Remarks:

viert/site: KZ Freehold	r	ity/County	ik v	Hitac	Sampling Deter	3-4-2
viect/Site: KZ Frachold	V	ny/county.		State:Y	Sampling Date.	De#0
restigator(s): Ed Sewall	s	Section Tow	nshin Ran	531	TIGN RIG	E
ndform (hillslope, terrace, etc.):			•			
bregion (LRR):						
il Map Unit Name:			~	NWI classi		
e climatic / hydrologic conditions on the site typical fo		r? Yes 4				
e Vegetation, Soil, or Hydrology	-			Normal Circumstances	•	No
<ul> <li>Vegetation, Soil, or Hydrology</li> </ul>				eded, explain any ansi		
JMMARY OF FINDINGS – Attach site m	ap snowing	sampling	point ic	cations, transec	ts, important f	eatures, etc
lydrophytic Vegetation Present? Yes	2 No	is the	Sampled	Area		
lydric Soil Present? Yes	No		a Wetlan	•	No	
Vetland Hydrology Present? Yes	No					
Bridiks.						
GETATION – Use scientific names of p	lants.					
		Dominant		Dominance Test wo	orksheet:	*** **
ree Stratum (Plot size:)		Species?		Number of Dominant		
·				That Are OBL, FACV	v, or PAC:	<u>) (A)</u>
·				Total Number of Don Species Across All S		, (B)
				•		<u> </u>
apling/Shrub Stratum (Plot size:)		= Total Cove	ər	Percent of Dominant That Are OBL, FACV	Species V, or FAC:	(A/B)
				Prevalence index w		
•		<del></del>			f: Multir	• •
-				OBL species FACW species		
·				FAC species		
· Up-1/1,	<u> </u>	= Total Cove	ər	FACU species		
lerb Stratum (Plot size:)			FALL	UPL species		
Euro pp Festion spp	50		FAC	Column Totals:		
				Provolence Ind	ex = B/A =	
•				Hydrophytic Vegeta		
•				Dominance Test		
·				Prevalence Inde		
•				Morphological A	daptations <sup>1</sup> (Provide	e supporting
· · · · · · · · · · · · · · · · · · ·			1		rks or on a separat	
		= Total Cove	ər	Problematic Hyd	ropnyuc vegetation	i (⊏xplain)
Voodu Ving Statum (Plat alaa)				<sup>1</sup> Indicators of hydric s	soil and wetland hw	trology must
Voody Vine Stratum (Plot size:)				be present, unless di		
•			1			
	·······		 er	Hydrophytic	1	
•		= Total Cove		Hydrophytic Vegetation	Yes 14-	
•		= Total Cove		Hydrophytic Vegetation	Yes No _	

Sampling Point: DP8

Profile Description: (Describe to the denti	h needed to document the indicator or confirm	n the absence of indicators 1
		n ne aboence vi multatura.j
Depth <u>Matrix</u> (inches) Color (moist) %	<u>     Redox Features     Color (moist) % Type<sup>1</sup> Loc<sup>2</sup> </u>	Texture Remarks
14 Jom Ul	Few For Farl	Clay In
<u> </u>		<u> </u>
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=	Reduced Matrix, CS=Covered or Coated Sand G	rains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soll Indicators: (Applicable to all L		indicators for Problematic Hydric Solis <sup>3</sup> :
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	3Indiantena of hydrophysic constation and
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Redox Depressions (F8) Vernal Pools (F9)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present,
Sandy Gleyed Matrix (S4)		unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		
Depth (inches):		Hydric Soil Present? Yes No
Remarks:		
Contanto.		
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required	; check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Rol	ots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils (C	6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7	) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes N	lo Depth (inches):	
Water Table Present? Yes N	lo Depth (inches):	
Saturation Present? Yes N	lo Depth (inches): Wet	land Hydrology Present? Yes No
(includes capillary fringe)	nitoring well period photos armious inspections	if available:
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspections),	, II AVAHAJIG.
Remarks:		

roject/site: KZ Frachol	d	City/County:	K.H.	~~~	Sampling D	ate: 3 1	4-2
pplicant/Owner:				State: WA	Sampling Pr	pint: D	p#
vestigator(s): Zd Sewe	4	Section, Towns	hip, Rande:	531-	TIGNR	19 E	
ndform (hillslope, terrace, etc.):							
Ibregion (LRR):							
bil Map Unit Name:	±0:				ification:		
e climatic / hydrologic conditions on the site typ		ar? Yes					
re Vegetation, Soil, or Hydrolog	-			• • •	" present? Yes		<b>^</b>
re Vegetation, Soil, or Hydrolog					wers in Remark		·
						•	
UMMARY OF FINDINGS – Attach s	ite map showing	sampling p	oint locatio	ons, transec	ts, importar	nt feature	s, etc.
Hydrophytic Vegetation Present? Yes	No	1-41-0					
Hydric Soil Present? Yes			ampled Area Wetland?	Yes V	No		
Netland Hydrology Present? Yes _	No	within a	weband?	Tes	NO		
EGETATION – Use scientific names	Absolute	Dominant Inc Species? Si	latue	inance Test wo			
Tree Stratum (Plot size:)			NUM	per of Dominant		~	
			That	Are OBL, FACV	V, or FAC:	<u> </u>	(A)
2 3				Number of Don		2	( <b>D</b> )
4.			Shec	ies Across All S		-	<b>(B</b> )
		_ = Total Cover		ent of Dominant Are OBL, FACV		100	(A/B)
I			Prev	alence Index w		uitioly by:	
l			Prev	otal % Cover o		uitiply by:	
l			Prev	otal % Cover o species	<u>f:M</u>		
I 2 3 4			Prev1 OBLFAC\	Total % Cover o species W species	f:M x1=		
1 2 3 4 5			Prev. Prev. OBL FACV FAC	Total % Cover o species N species species	f: M x 1 = x 2 =		
1 2 3 5 ; Herb Stratum (Plot size: )		= Total Cover	Prev OBL FAC\ FAC FAC	Total % Cover o         species         N species         species         J species	f X1= X2= X3=		
1 2 3 5 ; Herb Stratum (Plot size: )		 = Total Cover \$	Prev. DBL FAC\ FAC\ FAC\ FAC\ UPL:	otal % Cover o         species         N species         species         J species         species	f:X1 = X2 = X3 = X4 =		
lerb Stratum (Plot size:) ) 	<u>हरु</u> ठु रु	= Total Cover	Prev. DBL FACV FACV FACV FACV FACV FACV FACV FACV	Total % Cover of species         species         species         J species         species         species         mn Totals:	f: M		   
lerb Stratum (Plot size:) lerb Stratum (Plot size:) 	لنج ليج ك	= Total Cover	Prev. DBL FACV FACV FACU FACU FACU Colur	Otal % Cover o         species         N species         species         J species         mn Totals:         Prevalence Ind	f: X 1 = X 2 = X 3 = X 4 = X 5 =		   
1 2 3 4 5 5 6 7 7 7 6 5 6 7 7 7 6 7.	  	= Total Cover	Prev. DBL FAC\ FAC\ FAC\ FAC\ Colur Colur Hydr	Otal % Cover of species         species         species         J species         species         mn Totals:         Prevalence Ind         ophytic Vegets         ominance Test	f: M		    (B)
1 2 3 4 5 1 1 2 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 7 7 5 7 7 5 7 7 5 7.	 కెల్ల 	= Total Cover	Prev.              OBL           FAC           FAC           FAC           FAC           Colur           Colur           Mydr	Otal % Cover o         species         N species         species         J species         species         nn Totals:         Prevalence Inde         Ophytic Vegeta         Prevalence Inde	f: M	3:	(B)
1.	 	= Total Cover	Prev.              OBL           FAC           FAC           FAC           FAC           Colur           Colur           Hydr	Otal % Cover of species         species         Species         J species         species         species         Inn Totals:         Prevalence Inde         Ophytic Vegets         Prevalence Inde         Ophytic Vegets         Prevalence Inde	f: M $x 1 =$ $x 2 =$ $x 3 =$ $x 4 =$ $x 5 =$ (A) ex = B/A = tion Indicators is >50% x is $\leq 3.0^{1}$ daptations <sup>1</sup> (Pro	s:	
1.	<u></u>	= Total Cover	Prev.              OBL           FAC           FAC           FAC           FAC           Colur           Colur           Mydr	Otal % Cover o         species         N species         species         J species         species         nn Totals:         Prevalence Inde         ophytic Vegets         Prevalence Inde         Apphological A         data in Remain	f: M x 1 = x 2 = x 3 = x 4 = x 5 = (A) ex = $B/A =$ tion indicators is >50% x is $\leq 3.0^1$ daptations <sup>1</sup> (Pro- rks or on a separation of the separati	s: bvide suppor arate sheet)	   (B) 
1.		= Total Cover	Prev.              OBL           FAC           FAC           FAC           FAC           Colur           Colur           Mydr	Otal % Cover o         species         N species         species         J species         species         nn Totals:         Prevalence Inde         ophytic Vegets         Prevalence Inde         Apphological A         data in Remain	f: M $x 1 =$ $x 2 =$ $x 3 =$ $x 4 =$ $x 5 =$ (A) ex = B/A = tion Indicators is >50% x is $\leq 3.0^{1}$ daptations <sup>1</sup> (Pro	s: bvide suppor arate sheet)	   (B) 
1.		= Total Cover	Prev. 	Otal % Cover o         species         N species         species         J species         J species         mn Totals:         Prevalence Inde         ophytic Vegets         Prevalence Inde         Aorphological A         data in Rema         roblematic Hydrogeneiter	f: M x 1 = x 2 = x 3 = x 4 = x 5 = (A) ex = $B/A =$ tion indicators is >50% x is $\leq 3.0^1$ daptations <sup>1</sup> (Pro- rks or on a separation of the separati	s: pvide suppor arate sheet) ation <sup>1</sup> (Explain hydrology r	
1.		= Total Cover	Prev.            OBL            OBL           FAC\         FAC\            FAC            FAC            FAC\            Colur            Colur	Otal % Cover of species         species         Species         J species         J species         Species         In Totals:         Prevalence Inde         Ophytic Vegeta         Prevalence Inde         Vorphological A         data in Remains         Problematic Hydrogenetic Hydroge	f: X 1 = X 2 = X 2 = X 3 = X 4 = X 5 = (A) ex = $B/A =$ tion indicators it >50% x is >50% x is >3.0 <sup>1</sup> daptations <sup>1</sup> (Pro- rks or on a separation key and wetland	s: pvide suppor arate sheet) ation <sup>1</sup> (Explain hydrology r	
Sapling/Shrub Stratum (Plot size:		= Total Cover	Preva              OBL           FAC\           FAC           FAC           FAC           FAC           FAC           FAC           FAC           FAC           Colur           Colur           FAC           Colur           Colur           FAC           Colur           FAC           Colur           FAC           Colur           FAC           FAC           Colur           FAC           Colur           FAC           Colur           FAC           Colur           FAC           Colur           FAC           Colur           FAC           FAC           Colur           FAC           FAC	Otal % Cover of species         species         N species         species         J species         species         In Totals:         Prevalence Inde         ophytic Vegets         Prevalence Inde         orphological A         data in Remains         Problematic Hydric sesent, unless di         ophytic tation	f: M x 1 = x 2 = x 3 = x 4 = x 5 = (A) ex = $B/A =$ tion indicators is >50% x is $\leq 3.0^1$ daptations <sup>1</sup> (Pro- rks or on a separation of the separati	s: pvide suppor arate sheet) ation <sup>1</sup> (Explain hydrology r	

SO	)IL

Sampling Point: \_

DP#9

epth <u>Matrix</u> nches) Color (moist) %	<u>     Redox Features</u> Color (moist) % Type <sup>1</sup> Lo	DC <sup>2</sup> Texture Remarks
3 1023/2		Sha air and
		- Supric noch Clay Jour
16 10412/1	Fer For Fort	_ clay low
	Reduced Matrix, CS=Covered or Coated Sa	
ydric Soll Indicators: (Applicable to all	LRRs, unless otherwise noted.)	indicators for Problematic Hydric Solis <sup>3</sup> :
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
_ Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
_ Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
_ Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
_ Thick Dark Surface (A12)	Redox Depressions (F8)	<sup>3</sup> Indicators of hydrophytic vegetation and
_ Sandy Mucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
_ Sandy Gleyed Matrix (S4)		unless disturbed or problematic.
estrictive Layer (if present):		
Туре:		
Depth (inches):		Hydric Soll Present? Yes No
Remarks:		
(DROLOGY		
letiand Hydrology Indicators:		
rimary Indicators (minimum of one required	I; check all that apply)	Secondary Indicators (2 or more required
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)

THIRDY HUMANION IN MAINTAIL OF ONO TOQUEOU, OF		Occordent indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livin	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled So	bils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	1	
Surface Water Present? Yes No	Depth (inches):	,
Water Table Present? Yes No _	Depth (inches):	
Saturation Present? Yes <u>Ves</u> No No	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitor	ing well, aerial photos, previous inspec	tions), if available:
Remarks:		

Category III - Total score = 16 - 18 Category IV -- Total score = 9 - 15 FUNCTION Improving Habitat Hydrologic Water Quality Circle the appropriate ratings  $\bigcirc$ Site Potential M М Μ н **(**D) н Landscape Potential H 97M) М н θŰ Ł 1 L (M) Value H н L M H Score Based on

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category		
Vernal Pools	II III		
Alakali	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	Н		
None of the above			

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Ratings

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

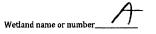
5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L, L, L

16



## 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	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 enswer 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**

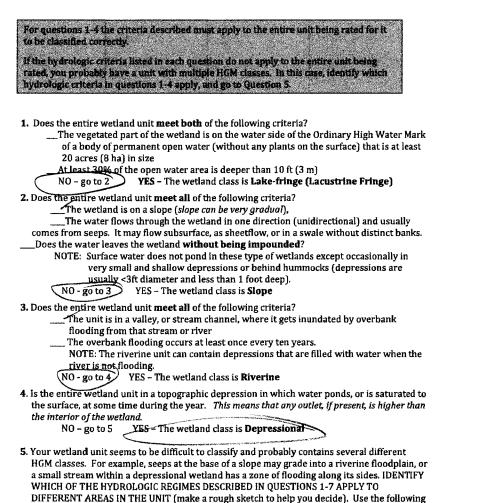
Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	\$ 2.1, \$ 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)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland Rating System for Eastern WA: 2014 Update Rating Form

 $\mathcal{D}$ 

Wetland name or number

## HGM Classification of Wetland Units in Eastern Washington



3

table to identify the appropriate class to use for the rating system if you have several HGM Wetland Rating System for Eastern WA: 2014 Undate **Rating Form** 

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.

## 

<b>DEPRESSIONAL W</b>	ETLANDS				Paints
Water Quality Functi	ons - Indicators th	at the site funct	ions to improve wa	ter quality.	(only 1 score per box)
D 1.0 Does the wetland	unit have the poten	tial to improve wa	iter quality?		
D	1.1 Characteristics of s	urface water flows	out of the wetland unit	:	
Wetland has no surfa				points = 5	
	mittently flowing outle			points =3	
	constricted permanent			points = 3	3
D 1.2 The soil 2 inches b	nently flowing surface		reanis luca NRCC dafia	points = 1	
YES points = 3	serow the surface (of the	an ayer is clay or c	NO (points = 0)	itions of sous)	0
D 1.3 Characteristics of	persistent vegetation (	emergent, shrub, a		class)	
Wetland has persister	nt, ungrazed, vegetatio	n for > 2/3 of area		points = 5	
,	nt, ungrazed, vegetatio		f area	points = 3	
Wetland has persister	nt, ungrazed vegetation	from 1/10 to < 1/3	3 of area	points = 1	~
Wetland has persister	nt, ungrazed vegetation	n <1/10 of area		(points = 0)	0
	D 1.4 Characteristic	s of seasonal pondi	ng or inundation.)		
This is the area of po	nding that fluctuates e	very year. Do not c	ount the area that is pe	rmanently ponded.	
Area seasonally pond	ed is > ½ total area of	wetland		points = 3	
	ded is ¼ - ½ total are			points = 1	1
Area seasonally pond	ed is < ¼ total area of	wetland		points = 0	*
Total for D 1			Add the point	s in the boxes above	4
<b>Rating of Site Potential</b>	If score is: 12	-16 = H 6		5 = 1	
D 2.0 Does the landscap	oe have the potential	to support the w			·····/
D2.1 Does the Wetland ur	nit receive stormwater	discharges?	····	Yes = 1 No = 0	0
D 2.2 is > 10% of the buff	er within 150 ft of wet	and unit in land use	es that generate polluta	ints Yes = DNo = 0	1
D2.3 Are there are septic :	systems within 250 ft o	f the wetland unit?		Yes = 1  No = 0	0
D2.4 Are there are other s	ources of pollutants co	ming into the wetl	and that are not listed i	n questions	2
D2.1 - D2.3? Source	•	-		Yes = 1 (No = 0	
Total for D 2			Add the point:	s in the boxes above	1
Rating of Landscape Pe	otential If score is:	3 or 4 = H	1 or 2 = M Record the rat	0 = L ing on the first page	
D 3.0 is the water quali	ty improvement prov	ided by the site v	· · · · · · · · · · · · · · · · · · ·		
			stream, river, or lake t		
				Yes = 1 (No = 0)	<u> </u>
D 3.2 Is the unit in a basin eutrophic lakes, probl	or sub-basin where wa lems with nuisance and		ue in some aquatic reso	ource (303d list, Yes = 1 No = 0	õ
D 3.3 Has the site been ide	entified in a watershed	or local plan as im	ortant for maintaining	water quality? (answer	
	DL for the drainage or l			Yes = 1 No = 0	Ì
Total for D 3	WA		Add the point	s in the boxes above	-
Rating of Value	If score is:	2-4 = H	1=M	0=1	
			Record the r	ating on the first page	

Wetland Rating System for Eastern WA: 2014 Update Rating Form

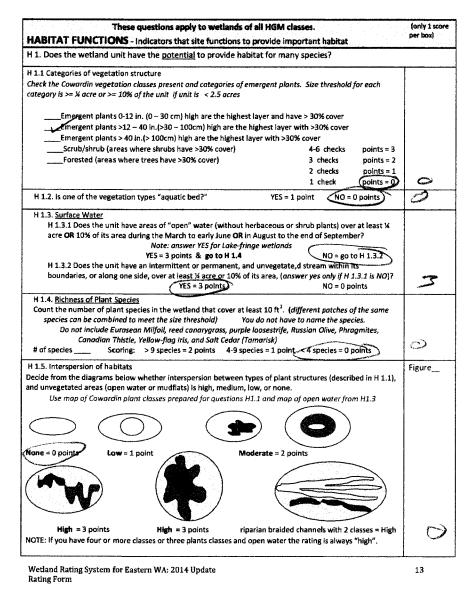
5



DEPRESSIONAL WETL	ANDS				Points
Hydrologic Functions - li		e site functio	ns to reduce flooding	and stream erosion.	(enty 1 score per box)
D 4. 0 Does the wetland un	it have the potent	ial to reduce f	looding and erosion?		
D 4.1 Characteristics of surfac	e water flows out of	the wetland u	nit:		
Wetland has no surface wa	ter outlet			points = 8	
Wetland has an intermitter	ntly flowing outlet			points = 4	
Wetland has a highly const				points = 4	14
Wetland has a permanentl (If outlet is a ditch and r			as "intermittently flowing"	points = 0 }	
D 4.2 Depth of storage during units with no outlet me			ht of ponding above the bo It water or deepest part (if		
Seasonal ponding: => 3 ft	above the lowest p	oint in unit or th	e surface of permanent po	onding points = 8	
Seasonal ponding: 2 ft - <	3 ft above the lowe	est point in unit	or the surface of permane	nt ponding points = 6	
The wetland is a "headwa				points = 4	
Seasonal ponding: 1 ft - <				points = 4	
Seasonal ponding: 6 in				points = 2	$\sim$
Seasonal ponding: <6 in	orr unit has only sat	urated soils		points = 0	2
Total for D 4			Add the po	ints in the boxes above	4
Rating of Site Potential	If score is: 1	2–16 =H	6 - 11 = M Record the rat	-5 = 1 ing on the first page	
D 5.0 Does the landscape h	ave the potential	to support hyd	rologic functions at the	site?	
D5.1 Does the unit receive an	y stormwater disch	arges?		Yes = 1 No = 0	ŝ
D5. Is >10% of the land use w	ithin 150 ft of the w	etiand in a land	uses that generates runof	Yes = 1 NO = 0	1
D 5.3 Is more than 25% of the	contributing basin	of the wetland	unit covered with intensive	e human land uses? Yes = 1 No = 0	Ú
Total for D 5	Add th	e points in the b	oxes above		1
Rating of Landscape Poten	tial If score is:	3 = H	1.2 = M	0 = L	
			Record the re	ating on the first page	
D 6.0 Are the hydrologic fu	nctions provided	by the site value	uable to society?	·	
D 6.1 is the unit is in a landsca	pe that has flooding	problems?			
Choose the description that be Choose the highest score if mo			wetiand unit being rated.	Do not add points.	
The wetland captures:	surface water that v	vould otherwise	flow downgradient into a	reas where flooding	
has damaged human o	r natural resources	(e.g. saimon re-	dds), AND		
<ul> <li>Damage occurs in su</li> </ul>	b-basin that is imm	ediately downg	radient of unit	points=2	
<ul> <li>Damage occurs in a :</li> </ul>				points = 1	
11 The existing or potenti the water stored by th				atural conditions that	1
Explain why				points = 0	
11 There are no problems	with flooding down	nstream of the i	unit.	points = 0	
D 6.2 Has the site has been id control plan?	entified as importa	nt for flood stor		a regional-flood Yes = 2 No 30	0
Total for D 6				in the boxes above	)
Rating of Value	If score is:	2-4 = H	1=M	0 = L	
THE PLANE				ing on the first page	
Wetland Rating System for I	Sastern WA: 2014	Update	needra the fat		6

Rating Form

## Wetland name or number



Wetland name or number

#### H 1.6. Special Habitat Features; Check the habitat features that are present in the wetland unit. The number of checks is the score. Loose rocks larger than 4" or large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. Cattails or bulrushes are present within the unit. Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. Emergent or shrub vegetation in areas that are permanently inundated/ponded. Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (conopy, sub-conopy, shrubs, herbaceous, moss/ground cover) Maximum score possible = 6 H 1. TOTAL Score -Add the check marks in the box above 4 **Rating of Site Potential** If score is: 12 - 16 = H 6 - 11 = M 0-5 = 1Record the rating on the first page H 2.0. Does the landscape have the potential to support habitat at the site? H 2.1 Accessible habitat (only area of habitat abutting wetland unit). Colculate: % 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 points = 2 20 - 33% of 1km circle 10-19% of 1km circle points = 1 3 <10% of 1km circle points = 0 H2.2 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 3 Undisturbed habitat < 10% of circle points = 0 H2.3 Land use intensity in 1 km circle. If: points = (- 2) > 50% of circle is high intensity land use Ò 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 6 Total for H 2 Add the points in the boxes above Rating of Landscape Potential If score is: 1-3 = M <1=L 4-6=H Record the rating on the first page H 3.0 Is the Habitat provided by the site valuable to society? H3.1Does 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 It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) \_\_It is a "priority area" for an individual WDFW species \_\_It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources It has 3 or more priority habitats within 100m (see Appendix B) 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 2 Site does not meet any of the criteria above points = 0

2 = H

1 = M

0 = L Record the rating on the first page

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Wetland Rating System for Eastern WA: 2014 Update Rating Form

If score is:

**Rating of Value** 

# 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
Check off any criteria that apply to the wetland. Circle the Category when the	
appropriate criteria are met.	
SC 1.0 Vernai pools	
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 (<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	
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	Cat. II Cat. III
SC 2.0 Alkali wetlands	
Does the wetland unit meets <b>one</b> of the following two criteria?	
— The wetland has a conductivity > 3.0 mS/cm.	
— The wetland has a conductivity > 3.0 mJcm. — 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.	
OR 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 % of the plant cover consists of species listed on Table 4	
<ul> <li>A pH above 9.0. All alkali wetlands have a high pH, but please note that</li> </ul>	
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	Cat. I

Wetland Rating System for Eastern WA: 2014 Update **Rating** Form

Wetland name or number

	r
SC 3.0 Wetlands with High Conservation Value (WHCV)	
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	Cat. i
SC 2.2 Is the wetland unit you are rating listed on the DMR 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?	1
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhewetlands.pdf	
YES – contact WNHP/DNR and go to SC 2. NO = not a WHCV $\rightarrow$	
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	1
SC 4.0 Bogs and Calcareous Fens	
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	l
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 mosses at ground level	
AND at least 30% of the total plant cover consists of species in Table 5?	
Yes – Category I bog No - go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory you may	
substitute that criterion by measuring the pH of the water that seeps into a hole dug at	
least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the	
wetland is a boa.	
SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red	
cedar, western hemlock, lodgepole pine, quaking aspen, 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	Cat. I
5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of	
peats and mucks?	1
Yes – Is a Calcareous Fen for purpose of rating No - go to Question 6	1
6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats	l .
and mucks, AND one of the two following conditions is met:	Ĺ
<ul> <li>Marl deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant</li> </ul>	
stems	Í.
• The pH of free water $\ge$ 6.8 AND electrical conductivity $\ge$ 200 uS/cm at multiple locations	Ì
within the wetland	į
Yes – is a Category I calcareous fen No - is not a calcareous fen	Cat. I

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

boundary that meets <b>at least</b> have identified a forested class is ver or stream of the total cover of woody eller than 2.5 acres) that are of or these priority habitats uspecial characteristics e than 50% of the tree species (by cat. I coides) represents at least 20% of cat. I
ver or stream of the total cover of woody oller than 2.5 acres) that are of or these priority habitats of these priority habitats special characteristics than 50% of the Tree species (by Cat. 1
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l) special characteristics than 50% of the tree species (by Cat. 1
than 50% of the tree species (by Cat. I
Cat. I
2
oides) represents at least 20% of Cat. I
1
3
where more than 50% of the tree
Cat. II
5
00 year floodplain" of a river or
Cat. II
nd falls into several categories.



## 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: <u>Old-growth east of Cascade crest</u>: 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. <u>Mature forests</u>: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decidence, 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).

#### \_\_\_\_ 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/. Rated by Sector Trained by Ecology? Yet No. Date of train Wet B \_\_\_\_\_ Date of site visit: 3/22-\_\_\_\_\_ 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-Score for each function based 1. Category of wetland based on FUNCTIONS Category I - Total score = 22 - 27 on three ratings (order of ratings is not Category II - Total score = 19 - 21 Category III - Total score = 16 - 18 important) Category IV – Total score = 9 - 15 9 ≃ H,H,H FUNCTION Improving Hydrologic Habitat 8 = H,H,M Water Quality 7 = H,H,L Circle the appropriate ratings 7 = H,M,M Site Potential H M (M) M 6 = H,M,L Landscape Potential H M Ŧ м н M 6 = M,M,M Ł 5 = H,L,L Value H M M ∕ ∕ L н **G**4/ 5 = M,M,L Score Based on 15 4 = M,L,L(0 Ratings 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category	
Vernai Pools	11 111	
Alakali	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	11	
None of the above		

Wetland Rating System for Eastern WA: 2014 Update Rating Form



## 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 hydroperiads)	H1.3.1	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

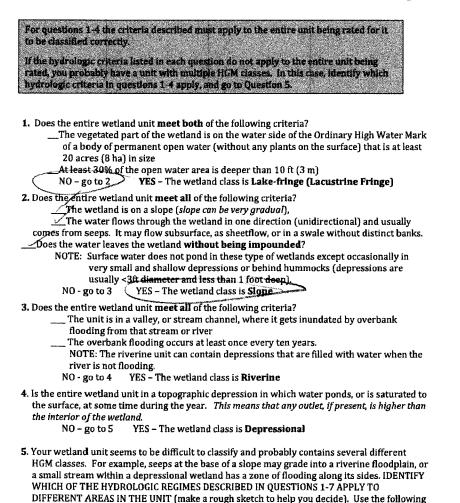
Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L.2.2	
Polygon of area 1km from wetland edge (Including polygons for 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 abave}	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	5 2.1, 5 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)	\$ 3.3	

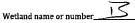
# Wetland name or number

## HGM Classification of Wetland Units in Eastern Washington



3

table to identify the appropriate class to use for the rating system if you have several HGM Wetland Rating System for Eastern WA: 2014 Update **Rating Form** 



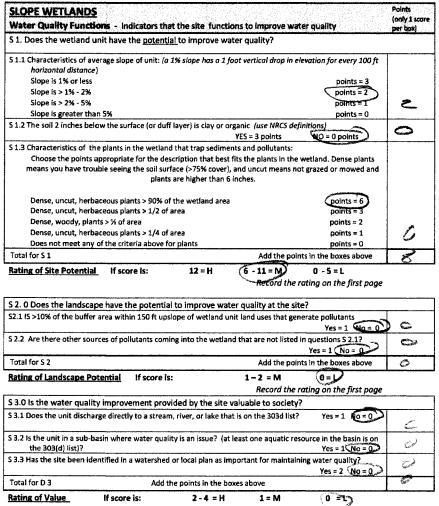
classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class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

4

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



Record the rating on the first page

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Wetland Rating System for Eastern WA: 2014 Update Rating Form

S 4.0 Does the wetland unit have the potential 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. YES = 1 All other conditions = 0 1 = M **Rating of Site Potential** If score is: 0 = L Record the rating on the first page \$ 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, Yes T No = 0 pasture, residential, commercial, or urban? **Rating of Landscape** Potential If score is: 1=M 0 = L Record the rating on the first page

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

Rating of Value	If score is:	2-4=H	1 = M Record the rat	رتي ting on the first page	2
Total for S 6			Add the po	ints in the boxes above	
S 6.2 Has the site has b	een identified as impo	ortant for flood cor	iveyance in a regional f	ood control plan? Yes = 2	0
Surface flooding problems are in a sub-basin further down-gradient points = 1 No flooding problems anywhere downstream plints = 0		anter. Auroparte			
damage to hun	an or natural resource	ces	surface flooding problem	points = 2	
S 6.1 Distance to the ne			•		
S 6.0 Are the hydrologic functions provided by the site valuable to society?					

NOTES and FIELD OBSERVATIONS:

Wetland name or number

**SLOPE WETLANDS** 

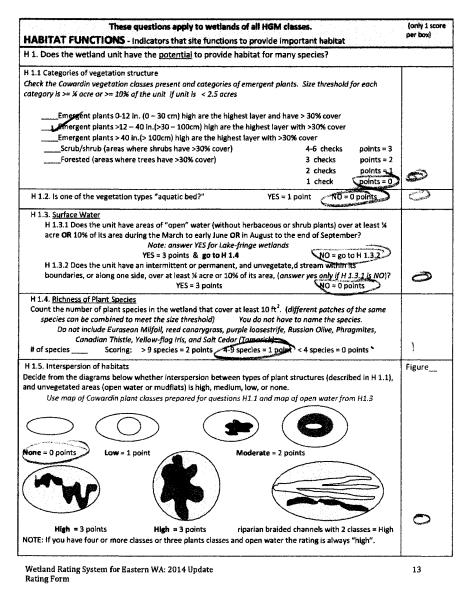
erosion

Points

(only 1 score

per tox)

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



	$\mathcal{B}$
Wetland name or number	

#### H 1.6. Special Habitat Features: Meck the habitat features that are present in the wetland unit. The number of checks is the score. Loose rocks larger than 4" or large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. \_Cattails or bulrushes are present within the unit. Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. Emergent or shrub vegetation in areas that are permanently inundated/ponded. \_Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (conopy, sub-conopy, shrubs, herbaceous, moss/ground cover) Maximum score possible = 6 H 1. TOTAL Score -Add the check marks in the box above 2 6 - 11 = M **Rating of Site Potential** If score is: 12 - 16 = H 0 - 5 = 1Record the rating on the first page H 2.0. Does the landscape have the potential to support habitat at the site? H 2.1 Accessible habitat (only area of habitat abutting wetland unit). Colculate: % 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 points = >> 20 - 33% of 1km circle Z 10-19% of 1km circle points = 1 <10% of 1km circle points = 0 H2.2 Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches ioints = 25 Undisturbed habitat 10 - 50% and > 3 patches points = 1 2 Undisturbed habitat < 10% of circle points = 0 H2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (- 2) 0 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 $^{\circ}$ boundaries of reclamation areas, irrigation district, or reservoirs ) points = 3 4 Total for H 2 Add the points in the boxes above 1-3 = M Rating of Landscape Potential If score is: 4-6=H <1=1 Record the rating on the first page H 3.0 Is the Habitat provided by the site valuable to society? H3.1Does 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 \_\_\_It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) \_t is a "priority area" for an individual WDFW species \_\_\_It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources \_\_\_\_It has 3 or more priority habitats within 100m (see Appendix B) \_\_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 Rating of Value If score is: 2 = H) 1 = M 0 = L Record the rating on the first page

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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 apphy. NOTE: All units should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the	
appropriate criteria are met.	
SC 1.0 Vernal pools	
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 (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay.	
SC 1.1 Is the vernal pool relatively undisturbed in Eebruary and March?	
YES = Go to SC 1.2 NO $-$ not a vernal pool with special characteristics	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	Cat. II Cat. III
	+
SC 2.0 Alkali wetlands	
Does the wetland unit meets one of the following two criteria?	
— The wetland has a conductivity > 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.	
OR 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 ¾ of the plant cover consists of species listed on Table 4	1
<ul> <li>A pH above 9.0. All alkali wetlands have a high pH, but please note that</li> </ul>	
some freshwater wetlands may also have a high pH. Thus, pH alone is not	
a good indicator of alkali wetlands.	
YES = Category   NO - not an alkali wetland	Cat. I

## 13

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

SC 3.0 Wetlands with High Conservation Value (WH	cv)	
SC 2.1 Has the Department of Natural Resources upd	ated their web site to include the list of	
Wetlands with High Conservation Value?	· · · · · · · · · · · · · · · · · · ·	
YES - Go to SC 2.2 NO - Go to	SC23	Cat. I
SC 2.2 Is the wetland unit you are rating listed on the		
Conservation Value? YES = Category I	NO = not a WHCV	
SC 2.3 Is the wetland unit being rated in a Section/To		
Heritage wetland?	p,	
http://www1.dnr.wa.gov/nhp/refdesk/	datasearch/wnhowetlands.pdf	
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		
value and is listed on their web site?		
	an WHCV	
SC 4.0 Bogs and Calcareous Fens		
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 belo	w to identify if the wetland is a bog or	
calcareous fen. If you answer yes you will still need to r	ate the wetland based on its functions.	
SC 4.1. Does an area within the wetland unit have or	ganic soil horizons (i.e. layers of organic	
soil), either peats or mucks, that compose 16 inch	es or more of the first 32 inches of the	
soil profile? (See Appendix C for a field key to iden	tify organic sotts)?	
Yes - go to SC 4.3 (No	- go to SC 4.2	
SC 4.2. Does an area within the unit have organic sol	is, either peats or mucks that are less	
than 16 inches deep over bedrock or an imperme	ble hardpan such as clay or volcanic	
ash, or that are floating on top of a lake or pond?	and the same and the	
Yes - go to SC 4.3 N	o - Is not a bog for rating	
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	o - go to SC 4.4	
NOTE: If you are uncertain about the extent of ma	sses in the understory you may	
substitute that criterion by measuring the pH of th	e water that seeps into a hole dug at	
least 16" deep. If the pH is less than 5.0 and the p	ant species in Table 5 are present, the	
wetland is a bog.		
SC 4.4 Is an area with peats or mucks forested (> 309	6 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	on of species) listed in Table 5 provide	
more than 30% of the cover under the canopy		
Yes - Category   bog NO -	- go to question SC 4.5	Cat. I
5. Do the species listed in Table 6 comprise at least 20		
peats and mucks?		
Yes – Is a Calcareous Fen for purpose of ratin	g No - go to Question 6	
6. Do the species listed in Table 6 comprise at least 10	1	
and mucks, AND one of the two following co		
<ul> <li>Mari deposits (calcium carbonate (CaCO3) pr</li> </ul>		
stems	completely seen on the contraction of plane	
• The pH of free water $\geq$ 6.8 AND electrical con	ductivity $\ge 200 \text{ uS/cm}$ at multiple locations	
within the wetland		
Yes – is a Category I calcareous fen	No - Is not a calcareous fen	Cat. I

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

	f forest rooted within its boundary that meets at least	
one of the following three criterian present in question H 1.1	a? (Continue only if you have identified a forested class is	
	0 year" floodplain of a river or stream	
	represents at least 20% of the total cover of woody	
There is at least ¼ acre of tree	es (even in wetlands smaller than 2.5 acres) that are	[
"mature" or "old-growth" acc	cording to the definitions for these priority habitats	
developed by WDFW (see de	finitions in question H3.1)	
YES = go to SC 5.1 NO -not	a forested wetland with special characteristics)	
	rest canopy where more than 50% of the tree species (by	
cover) are slow growing native tree	es (see Table 7)	Cat. I
YES = Category I	NO = go to SC 5.2	
	e aspen (Populus tremuloides) represents at least 20% of	Cat. i
the total cover of woody species.		
YES = Category I	NO = go to SC 5.3	
SC 5.3 Does the wetland unit have area	as with a forest canopy where more than 50% of the tree	
species (by cover) are fast growin	g species. (see Table 7)	Cat. II
YES = Category II	NO = go to SC 5.5	
SC 5.4 Is the forested component of th stream?	e wetland within the "100 year floodplain" of a river or	
YES = Category II		Cat. II
	cial Characteristics ighest" rating if wetland falls into several categories. wered NO for all types enter "Not Applicable" on p.1	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: <u>Old-growth east of Cascade crest</u>: 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. <u>Mature forests</u>: 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.

RATING	SUMMAR	Y – Eastern	Washington
Name of wetland (or ID #):	KZ We		Date of site visit: 3/22
Rated by Ect Sam	<u> </u>	d by Ecology? Yes	No Date of training
HGM Class Used for Rating	epsend	Unit has multiple	HGM classes?YN

 $\sim$ 

Wetland name or number\_

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



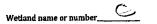
1. Category of wetland based on FUNCTIONSCategory I - Total score = 22 - 27Category II - Total score = 19 - 21Category III - Total score = 16 - 18Category IV - Total score = 9 - 15							Score for each function based on three ratings (order of ratings is not important)				
FUNCTION	(5) (3)	tiprovi ter Op	100		<b>ydrol</b> u opropr		ratii	labit	at .		9 ≖ H,H,H 8 ≖ H,H,M 7 = H,H,L
Site Potential	н	M		H	M	ĥ	H	M/		¢	7 = H,M,M
Landscape Potential	H	M	3	H	M	X	<b>H</b>	M	Ž		6 = H,M,L 6 = M,M,M
Value	н	M	Ð	н	TM)		H	) м	L		5 = H,L,L
Score Based on Ratings		3			ú	t	-	7		14	5 = M,M,L 4 = M,L,L 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHANACTERISTIC	CATEGORY Circle the oppropriate category
Vernal Pools	n m
Alakali	1
Wetland with high conservation value	]
Bog	I
Old Growth or Mature Forest - slow growing	1
Aspen Forest	I I
Old Growth or Mature Forest - fast growing	11
Floodplain forest	II
None of the above	V
	· ·

Wetland Rating System for Eastern WA: 2014 Update Rating Form

1



## 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 TMOL'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 another 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)	R4.1	
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	

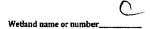
## Lake-fringe Wetlands

Map of:	Te answet questione:	Pigare #
Cowardin plant classes and classes of emergents	L1.1, L4.1, H1.1, H1.4	
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	

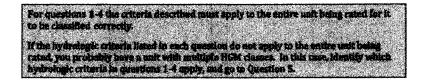
## Slope Wetlands

Maa ef:	To ensure questions:	Pigura #
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	\$ 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)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	\$ 3.3	

Wetland Rating System for Eastern WA: 2014 Update Rating Form  $\mathbb{D}$ 



## **HGM Classification of Wetland Units in Eastern Washington**



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 A 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 Rating System for Eastern WA: 2014 Update

**Rating Form** 



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 waterid 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.

4

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

DEPRESSIONAL WI Water Quality Function		at the site funct	ions to improve water	quality.	Points (only 1 score per box)
D 1.0 Dees the wetland	unit have the <u>poten</u>	tial to improve wa	iter quality?		
D1	1 Characteristics of s	urface water flows	out of the wetland unit:		
Wetland has no surfac	e water outlet -			points = 5	
Wetland has an interm	ittently flowing outle	t		points = 3	
Wetland has a highly c				points = 3	
Wetland has a perman				points = 1	5
	low the surface (or d	uff layer) is clay or o	organic (use NRCS definition	s of sails)	
YES points = 3			NO points = 0		
U 1.3 Characteristics of p	ersistent vegetation (	emergent, shrub, a	nd/or forest Cowardin class	1	
Wetland has persisten	t, ungrazed, vegetatio	n for > 2/3 of area		points = 5	
Wetland has persisten	t, ungrazed, vegetatio	n from 1/3 to 2/3 o	farea	points = 3	
Wetland has persisten	t, ungrazed vegetation	1 from 1/10 to < 1/3	3 of area	points = 1	$\diamond$
Wetland has persisten				points = 0	
	D 1.4 Characteristic				
This is the area of port	ding that fluctuates e	very year. Do not a	ount the orea that is perma	nently ponded.	
Area seasonally ponde	d is > ½ total area of	wetland		points = 3	
Area seasonally pone	ed is ¼ - ¼ total are	a of wetland		noints = 1	0
Area seasonally ponde	d is < ¼ total area of	wetland		Cooints = D	
Total for D 1			Add the points in t	he boxes above	3
Rating of Site Potential	If score is: 12	-16 = H 6	-11 = M 0-5 = Record the rating		
D 2.0 Does the landscap	e have the potential	to support the w	ater quality function at t	he site?	
D2.1 Does the Wetland un	t receive stormwater	discharges?		Yes = 1 No = 0	0
D 2.2 is> 10% of the buffe	r within 150 ft of wet	and unit in land us	es that generate pollutants	Yes = 1 10 = 0	$) \subset$
D2.3 Are there are septic s	stems within 250 ft o	f the wetland unit?	1	Yes = 1 No=0	0
D2.4 Are there are other so	ources of pollutants co	ming into the wetl	and that are not listed in qu	estions	~
D2.1-D2.37 Source				Yes = 1 No = 0	$\sim$
Total for D 2			Add the points in t	he boxes above	9
Rating of Landscape Po	tential If score is:	3 or 4 = H	1 or 2 = M Ø Record the rating		
D 3.0 is the water quality	improvement prov	ided by the site v	aluable to society?		
D3.1 Does the	unit discharge directly	(within 1 mile) to a	stream, river, or lake that i	s on the 303dlist? Yes = 1 No = 0	<i>C</i> .
D 3.2 Is the unit in a basin	a cub honin ushara uu	the available is an inc			
eutrophic lakes, proble			de ni some aquatic resource	Yes = 1 No = 0	$\circ$
D 3.3 Has the site been ide	ntified in a watershed I. for the drainage or I			er quality? (answer	si.
i wig uicie is a Innu	i jur ine aramage of I	wan n waoa unu i	a juunu)	Yes = 2 No = 2	$\mathcal{Q}$
Total for D 3	****		Add the points in		2
Rating of Value	If score is:	2-4 ≠H	1=M (0:	2	
CARGE OF LEVEL		<u> </u>		g on the first page	

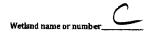
Wetland Rating System for Eastern WA: 2014 Update Rating Form

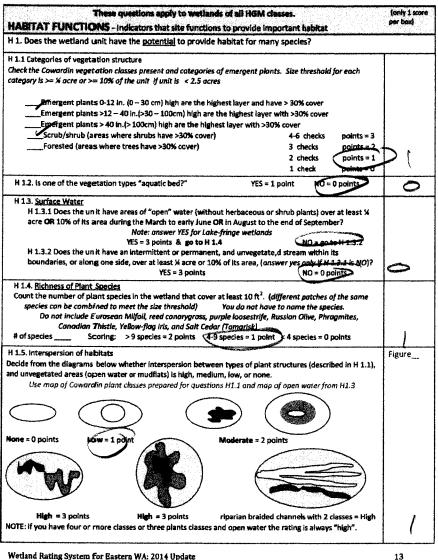
5

C

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

DEPRESSIONAL WETLAN Hydrologic Functions - India	00000	e site functio	ns to reduce flooding and	i stream erosion.	Points (only 1 score per box)
D 4. 0 Does the wetland unit ha	we the potent	al to reduce fi	ooding and erosion?	in in production of the state of the	
D 4.1 Characteristics of surface wa	ter flows out of	the wetland un	lit:		, <u></u>
Wetland has no surface water				points = 8	
Wetland has an intermittently	flowing outlet			Points = 4)	
Wetland has a highly constricte	d permanently	flowing outlet		points = 4	1
Wetland has a permanently flo (If outlet is a ditch and not p	permanently flav	wing treat unit i		points = 0	7
3.2 Depth of storage during wet units with no outlet measure			ht of panding above the botton it water or deepest part (if dry		
Seasonal ponding: => 3 ft abo					
Seasonal ponding: 2 ft - < 3 ft		st point in unit	or the surface of permanent p		
The wetland is a "headwater"				points = 4	
Seasonal ponding: 1 ft -< 2 ft				points = 4 points = 2	
Seasonal ponding: 6 in - < 1 f Seasonal ponding: <6 in orr i		unated soils		points = 2	0
Seasonal ponoing: <o (<br="" in="" orr="">fotal for D 4</o>	onit has only sat	urated sons	Add the point	in the boxes above	to and
					,
Rating of Site Potential If :	score is: 1	2-16 =H	6 - 11 = M Record the rating	on the first page	
5.0 Does the landscape have	the potential (	o support hyd	rologic functions at the site	?	
5.1 Does the unit receive any sto	ormwater discha	inges?		Yes = 1 No = 0	2
5. Is >10% of the land use within	150 ft of the w	etland in a land	uses that generates runoff?	Yes = 1 No = 0	$\odot$
5.3 Is more than 25% of the cor	tributing basin	of the wetland	unit covered with intensive hu	man land uses? Yes = 1 No = 0	نست
Total for D 5	Add the	points in the b	oxes above		ø
Rating of Landscape Potential	If score is:	3 = H	1.2=M		
			Record the ratin	g on the first page	
) 6.0 Are the hydrologic functle	ons provided t	by the site value	vable to society?		
6.1 is the unit is in a landscape t	hat has flooding	problems?			
hoose the description that best r hoose the highest score if more to			wetland unit being rated. Do r	iot a <b>dd</b> points.	
U The wetland captures surfa				where flooding	
has damaged human or na					
<ul> <li>Damage occurs in sub-bit</li> </ul>			radient of unit	points=2	
<ul> <li>Damage occurs in a sub-</li> </ul>				points = 1	
11 The existing or potential of the water stored by the water stored by the water stored by the water stored by the storegy of				al conditions that	2
Explain why				points = 0	)
11 There are no problems wit	h flooding dowr	stream of the u	ınit.	points = 0	
6.2 Has the site has been identi control plan?	fied as importar	it for flood stor		egional flood = 2 No = 0	0
Total for D 6			Add the points in th		T
	If score is:	2-4 = H	1=M2	0 =1	
Rating of Value	IT SCOLE 12:	4-4 - 11			
Wetland Rating System for Bast	ern WA: 2014 l	Ipdate	Record the rating		6





Wetland Rating System for Eastern WA: 2014 Update **Rating** Form

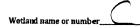
Wetland name or number.

weuand name or number					
H 1.6. Special Habitat Features:					
Greek the habitat features that are present in the wet	and unit. The number of checks is the score.				
Loose rocks larger than 4" or large, downed, woody de	oris (>4in. diameter) within the area of surface				
ponding or in stream.					
Cattails or bulrushes are present within the unit.					
Standing snags (diameter at the bottom > 4 inches) in t					
Emergent or shrub vegetation in areas that are permar					
Stable steep banks of fine material that might be used	y beaver or muskrat for denning (>45 degree				
slope) OR signs of recent beaver activity					
Invasive species cover less than 20% in each stratum o					
herbaceous, mass/ground cover)	Maximum score possible = 6				
H 1. TOTAL Score -	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				
H 2.0. Does the landscape have the potential to suppo					
H 2.1 Accessible habitat (only area of habitat abutting wetla					
% undisturbed habitat + [(% moderate and low int	nsity land uses)/2]%				
if total accessible habitat is:					
> 1/3 (33.3%) of 1km circle (~100 hectare					
20 - 33% of 1km circle	points = 2 points = 1				
10- 19% of 1km circle points = 1					
<10% of 1km circle	points = 0				
H2.2 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				
H2.3 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 rainfal	is less than 12 inches, and its water regime is not				
influenced by irrigation practices, dams, or water con	rol structures. (Generally, this means outside 🛛 📿				
boundaries of reclamation areas, irrigation district, or					
Total for H 2 Add the poi	ts in the boxes above 5				
Rating of Landscape Potential If score is: 4-6=H 1-3=M <1=L					
	Record the rating on the first page				
H 3.0 is the Habitat provided by the site valuable to so	iety?				
H3.1Does the site provides habitat for species valued in law					
Site meets ANY of the following criteria:	points = 2				
it provides habitat for Threatened or Endangered sp					
"It is a "priority area" for an individual WDFW species	and faith house as any second as second second				
	termined by the Department of Natural Resources				
It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources					

It has 3 or more priority habitats within 100m (see Appendix B) 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 1 = M 0 = L

**Rating of Value** If score is: 2 = H Record the rating on the first page



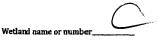
## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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
Check off any criteria that apply to the wetland. Circle the Category when the	
appropriate criteria are met.	
SC 1.0 Vernai pools	
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,	1
"obligate", wetland plants the wetland is probably NOT a vernal pool	
<ul> <li>The soil in the wetland are shallow (&lt;1ft deep (30 cm)) and is underlain by</li> </ul>	
an impermeable layer such as basalt or clay.	
<ul> <li>Surface water is present for less than <u>120 days during the "wet" season.</u></li> </ul>	
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	
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.)?	Cat, li
YES = Category II NO = Category III	Cat, ili
SC 2.0 Alkali wetlands	
Does the wetland unit meets one of the following two criteria?	
The wetland has a conductivity > 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 one is sourced with a hour of only.	
area is covered with a layer of salt.	
OR does the wetland unit meets two of the following three sub-criteria?	
	1
More than % of the plant cover consists of species listed on Table 4	1
A pH above 9.0. All aikali wetlands have a high pH, but please note that	1
some freshwater wetlands may also have a high pH. Thus, pH alone is not	
a good indicator of alkali wetlands	Cat. I
YES = Category I NO - not an alkali wetland	+

Wetland Rating System for Eastern WA: 2014 Update Rating Form

Vetland name or number	
SC 3.0 Wetlands with High Conservation Value (WHCV)	
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	Cat. I
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?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhowetlands.pdf	
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 wetland with High Conservation	
value and is listed on their web site?	
YES = Category I NOnot an WHCV	
SC 4.0 Bogs and Calcareous Fens	
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 voicanic	
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 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	
Yes – Category I bog No - go to SC 4.4 NOTE: If you are uncertain about the extent of mosses in the understory you may	
substitute that criterian 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 boa.	
SC 4.4 is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red	
cedar, western hemlock, iodgepole 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	Cat. I
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 (CaCO3) precipitate) occur on the soil surface or plant	
stems	
<ul> <li>The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations</li> </ul>	
within the wetland Yes - is a <b>Category I</b> calegroous fan	Cat. I
Yes - Is a Category I calcareous fen No - Is not a calcareous fen	



SC 5.0 Forested Wetlands		
Does the wetland unit have an area of	of forest rooted within its boundary that meets at least	
	a? (Continue only if you have identified a forested class is	
present in question H 1.1)		
<ul> <li>The wetland is within the "10</li> </ul>	0 year" floodplain of a river or stream	
<ul> <li>aspen (Populus tremuloides) species</li> </ul>	represents at least 20% of the total cover of woody	
•	es (even in wetlands smaller than 2.5 acres) that are	
	cording to the definitions for these priority habitats	
developed by WDFW (see da	and the second se	
	a forested wetland with special characteristics	
	prest canopy where more than 50% of the tree species (by	
cover) are slow growing native tre		Cat. I
YES = Category I	NO = go to SC 5.2	
SC 5.2 Does the unit have areas where	e aspen (Populus tremuloides) represents at least 20% of	Cat. I
the total cover of woody species.		
YES = Category I	NO = go to SC 5.3	
SC 5.3 Does the wetland unit have are	as with a forest canopy where more than 50% of the tree	
species (by cover) are fast growin		Cat. II
	Babcelour face (and )	
YES = Category II	NO = go to SC 5.5	
SC 5.4 Is the forested component of th stream?	e wetland within the "100 year floodplain" of a river or	
YES = Category II		Cat. II
コール・シート ほうしん しゅうち ちょうちぬやく 気浸がむ しんてい	ecial Characteristics Nghest" rating if wetland falls into several categories. wered NO for all types enter "Not Applicable" on p.1	NA

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

## Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the countles 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*).

\_\_\_\_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.

\_\_\_\_\_Tains: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, and site, and/or sedimentary rock, including riprap sildes 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.

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.

<b>RATING SUMMARY</b> – Eastern Washington					
Name of wetland (or ID #): KZ	- <u>Mut D</u> Date of site visit: <u>3</u> /22 Trained by Ecology? Yes No_ Date of training				
HGM Class Used for Rating Supe					

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

OVERALL WETLAND CATEGORY

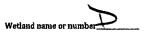
Category of wetland based on FUNCTIONS     Category I - Total score = 22 - 27     Category II - Total score = 19 - 21     Category III - Total score = 16 - 18     Category IV - Total score = 9 - 15								Score for each function based on three ratings (order of ratings is not important)			
FUNCTION		inprov iter Q			ydrol oorool		rati	tebit	at 		9 = H,H,H 8 = H,H,M 7 = H,H,L
Site Potential	н	M	С,	ТН	6	1	Тн	M			7 = H,M,M
landscape Potential	H	M	5	H	M	Ŕ	t)	M	$\mathbf{Y}$		6 = H,M,L 6 = M.M.M
Value	H	M	T	H	M	V.	(H)	M	L		5 = H,L,L
Score Based on Ratings		3			3		<u> </u>	7		15	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	n m
Alakali	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	11
None of the above	

Wetland Rating System for Eastern WA: 2014 Update Rating Form

Wetland name or number



## 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	

#### **Biverine Wetlands**

Nap 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)	R4.1
Polygon of area 1km from wetiand 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

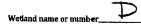
## Lake-fringe Wetlands

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 TMOL's for WRIA in which unit is found (from web)	L 3.3	

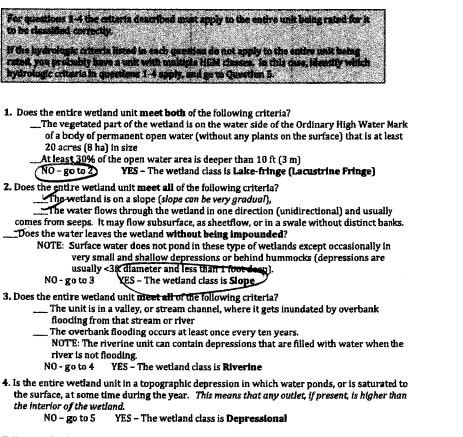
## Slope Wetlands

Mag at	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	1
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	\$ 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants (can be added to figure above)	54.1	
Boundary of 150 ft buffer (can be added to another figure)	\$ 2.1, \$ 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)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland Rating System for Eastern WA: 2014 Update Rating Form  $\leq$ 



## HGM Classification of Wetland Units in Eastern Washington



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 Rating System for Eastern WA: 2014 Update Rating Form 3 Wetland name or number\_\_\_\_\_

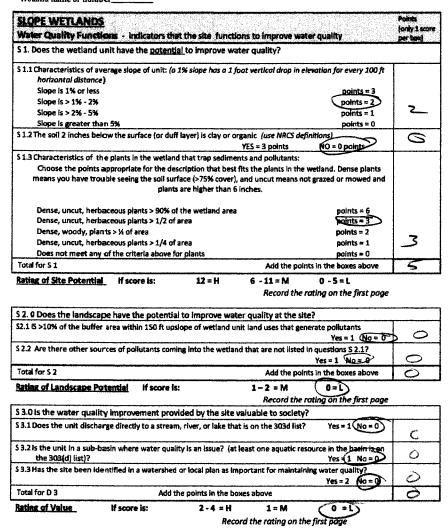
classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class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

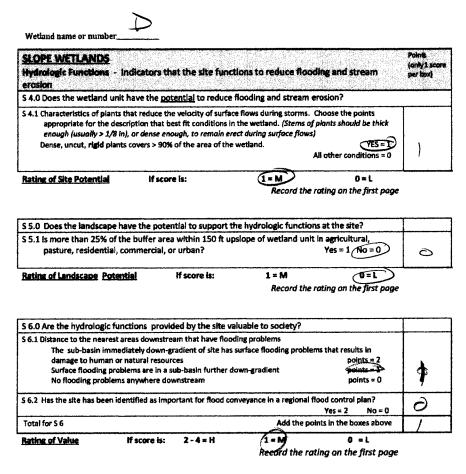
HGH Classes within the wetland unit boing rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional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

4

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

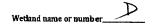


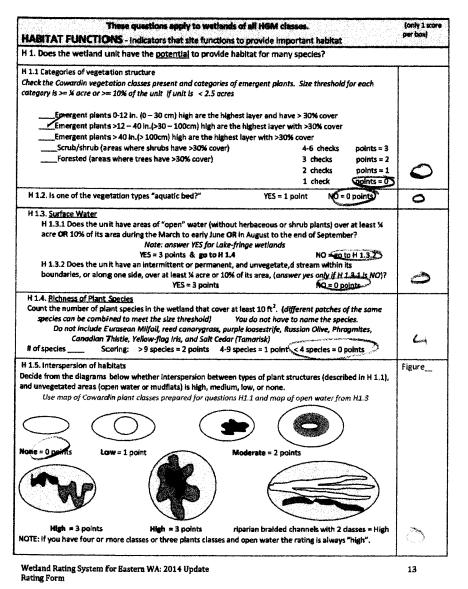


**NOTES and FIELD OBSERVATIONS:** 

Wetland Rating System for Bastern WA: 2014 Update Rating Form

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Wetland name or numb	er				
H 1.6. Special Habitat Fea	Ures:				1
Aneck the habitat fe		sent in the wetland u	nit. The number of ch	ecks is the score.	
Loose rocks larger th	an 4" <u>or</u> large, dow	ned, woody debris (>	4in. diameter) within	the area of surface	
ponding or in stream	n.				
Cattalis or buirushes	,				
				0 m (100ft) of the edge.	1
Emergent or shrub v					
			iver or muskrat for de	nning (>45 degree	
slope) OR signs of r				an ann abaile	1, 1
herbaceous, mass/		each stratum of vege	tation (conopy, sub-co	mopy, snruos, m score possible = 6	
H 1. TOTAL Score -	round cover)		Add the check marks		
Rating of Site Potentia	if score is:		6 - 11 = M	M-5=1	ę.
Raung of Site Potentia	IT SCORE IS:	12 - 10 = 1		ing on the first page	·····
H 2.0. Does the landsca	pe have the pote	ntial to support hal	pitat at the site?		
H 2.1 Accessible habitat (c	-	-	-		1
% undisturbed habitat		ate and low intensity	land uses)/2] =_	%	
If total accessible h				$\bigcap$	
	3.3%) of 1km circle	(~100 hectares)		points = 3	
	of 1km circle			points = 2	3
10-19%	of 1km circle			points = 1	
<10% of 1	km circle			points = 0	
H2.2 Undisturbed habitat	in 1 km circle aroun	d unit. If:			
Undisturi	oed habitat > 50% o	nf circle		points = 3	
Undisturi	ed habitat 10 - 50	% and in 1-3 patches		points = 2	
Undisturi	ed habitat 10 - 50	K and > 3 patches		points = 1	2
Undisturbed habitat < 10% of circle points = 0					
H2.3 Land use intensity in	1 km circle. if:				
> 50% of	circle is high intens	sity land use		points = (- 2)	$ \circ $
Does not	meet criterion abo	ve		(points = 0)	
The wetland unit	is in an area where	annual rainfall is less	than 12 inches, and i	its water regime is not	
influenced by irrigat	tion practices, dam	s, or water control sti	uctures. (Generally, t	his means outside	$\circ$
boundaries of recla	nation areas, irriga	tion district, or reserv	<i>roirs</i> ) points	;=3	
Total for H 2		Add the points in	the boxes above		5
Rating of Landscape Po	tential If score is	s: 4-6=H	5 1-3 = M	<1=L	
		$\subseteq$	Record the n	ating on the first page	
H 3.0 Is the Habitat prov	ided by the site v	aluable to society?			
H3.1Does the site provide				hoose the highest score)	
Site meets ANY of the follo	•			points = 2	
It provides habitat	for Threatened or	Endangered species (	any plant or animal o	n state or federal lists)	
It is a "priority are					
_It is a Wetland Wit	h a High Conservat	ion Value as determin	ned by the Departmen	nt of Natural Resources	
It has 3 or more pr	iority habitats with	in 100m (see Append	iix B)		
It has been catego	rized as an importa	nt habitat site in a lo	cal or regional compre	ehensive plan, in a	
Shoreline Maste	r Plan, or in a wate	rshed plan			1
Site has 1 or 2 priority hab	itats within 100m	(see Appendix B)		points = 1	
Site does not meet any of	the criteria above			points = 0	
Rating of Value	score is:	(2=H <sup>3</sup> )	1 = M	0 =L	
		$\smile$	Record the re	ating on the first page	

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Wetland Rating System for Eastern WA: 2014 Update **Rating Form** 

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

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

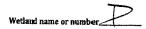
Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the	
appiopriate criteria are met.	
SC 1.0 Vernal pools	
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	
vegetation is typically upland annuals. NOTE: If you find perennial,	
"obligate", wetland plants the wetland is probably NOT a vernal pool	
<ul> <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> </ul>	
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	
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	Cat. II Cat. III
SC 2.0 Alkali wetlands	
Does the wetland unit meets one of the following two criteria?	
The wetland has a conductivity > 3.0 mS/cm.	1
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).	
<ul> <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>	
OR does the wetland unit meets two of the following three sub-criteria?	
<ul> <li>More than % of the plant cover consists of species listed on Table 4</li> </ul>	
— 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 ! NO - not an alkali wetland	Cat. I

Wetland Rating System for Eastern WA: 2014 Update Rating Form

# Wetland name or number

SC 3.0 Wetlands with High Conservation Value (WHCV)	Г <sup></sup>
SC 2.1 Has the Department of Natural Resources updated their web site to include the list of	
Wetlands with High Conservation Value?	<b>Cm</b> 1
YES - Go to SC 2.2 NO - Go to SC 2.3	Cat. i
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?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhowetlands.pdf	
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/N es a wetland with Fligh Conservation	
value and is listed on their web site?	
YES = Category I NO not an WHCV	
SC 4.0 Bogs and Calcareous Fens	
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 clever 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 mosses at ground level	
AND at least 30% of the total plant cover consists of species in Table 5?	
Yes Category I bog No go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory you may	
substitute that criterion by measuring the pH of the water that seeps into a hole dug at	
least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the	
wetland is a bog.	
SC 4.4 is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red	
cedar, western hemlock, lodgepole pine, quaking aspen, 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   bog NO - go to question SC 4.5	Cat. I
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:	
<ul> <li>Marl deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant</li> </ul>	
stems	
<ul> <li>The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations</li> </ul>	
within the wetland	
Yes – is a Category I calcareous fen No - is not a calcareous fen	Cat. 1



SC 5.0 Forested Wetlands		T
	f forest rooted within its boundary that meets at least	
	a? (Continue only if you have identified a forested class is	1
present in question H 1.1)	ar (continue only if you have wentified a forested class is	
	0 year" floodplain of a river or stream	
	represents at least 20% of the total cover of woody	
species	represents at least 20% of the total cover of woody	
•	es (even in wetlands smaller than 2.5 acres) that are	
	cording to the definitions for these priority habitats	
developed by WDFW (see de		
	a forested wetland with special characteristics	
SC 5.1 Does the wetland unit have a fo	rest canopy where more than 50% of the tree species (by	
cover) are slow growing native tre	es (see Table 7)	Cat. I
YES = Category I	NO = go to SC 5.2	
SC 5.2 Does the unit have areas where	aspen (Populus tremuloides) represents at least 20% of	Cat. i
the total cover of woody species.		
YES = Category I	NO = go to SC 5.3	
SC 5.3 Does the wetland unit have area	as with a forest canopy where more than 50% of the tree	
species (by cover) are fast growin	s sneries. (see Table 7)	Cat. H
		Calls 11
YES = Category II	NO = go to SC 5.5	
SC 5.4 is the forested component of th stream?	e wetland within the "100 year floodplain" of a river or	
YES = Category II		Cat. II
Category of wetland based on Spe	dal Characteristics	. 10
		MA
		111
stream? YES = Category II Itegory of wetland based on Spe Choose the "hi		Cat. II MA



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: <u>Old-growth east of Cascade crest</u>: 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/ba (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canoples 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. <u>Mature forests</u>: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decidence, 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 basait, 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).

<u>— Eastside Steppe:</u> 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), Sandherg 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.

RATING SUMN	/ARY – Easte	ern Washington
Name of wetland (or ID #): KZ Rated by Ed Sum/	Wet E	Date of site visit: 3/ 2 2
HGM Class Used for Rating Depurson	Unit has mult	tiple HGM classes?YN

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

# OVERALL WETLAND CATEGORY

## 1. Category of wetland based on FUNCTIONS

E

Wetland name or number.

Category I -	Total score = 22 - 27
eategory II -	Total score = 19 - 21

Category III - Total score = 16 - 18 Category IV - Total score = 9 - 15

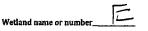
FUNCTION	4	npre ter C	ving hality		iydrol	ogic		Habit	*		9 = H,H,H 8 = H,H,M
	ىلغانات <u>، ال</u>		cle the		pprop	riate	rat	ings	~		7 = H,H,L 7 = H,M,M
Site Potential	H	M	L	H	M	(1)	H	M	()		6 = H,M,L
Landscape Potential	H	M	) [	H	M	21	R	М	T		6 = M,M,N
Value	Н	M	©	Н	(M)	L	TA)	M	L		5 = H,L,L
Score Based on Ratings		5	5	1	5			7		17	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	11 111			
Alakali	I			
Wetland with high conservation value	1			
Bog	I			
Old Growth or Mature Forest - slow growing	1			
Aspen Forest	1			
Old Growth or Mature Forest - fast growing	п			
Floodplain forest	Ш			
None of the above				

Wetland Rating System for Eastern WA: 2014 Update **Rating** Form

Score for each function based on three ratings (order of ratings is not important)



## 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	1
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	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)	D 3.1, D 3.2	1
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	1
Area of open water (can be added to map of hydroperiods)	H1.3.1	1

## **Riverine Wetlands**

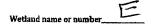
Map at	To anywar questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (can be added to another figure)	R 2.4	-1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. 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

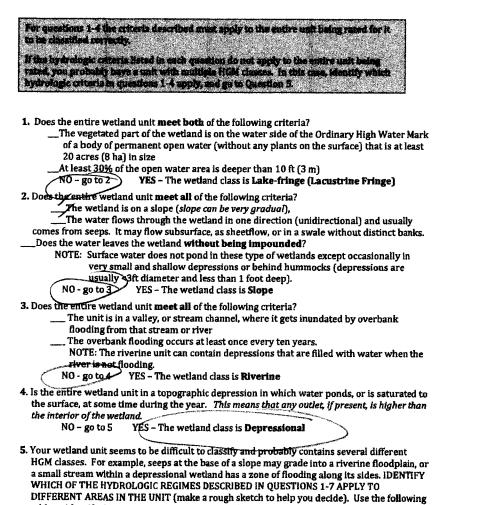
Whep eat:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L1.1, L4.1, H1.1, H1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (can be added to another figure)	L 2.2	1
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

## Slope Wetlands

Non of	To asswer 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 odded to figure above)	54.1	
Boundary of 150 ft buffer (can be added to another figure)	\$ 2.1, \$ 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)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	



## HGM Classification of Wetland Units in Eastern Washington



3

table to identify the appropriate class to use for the rating system if you have several HGM Wetland Rating System for Eastern WA: 2014 Update **Rating** Form

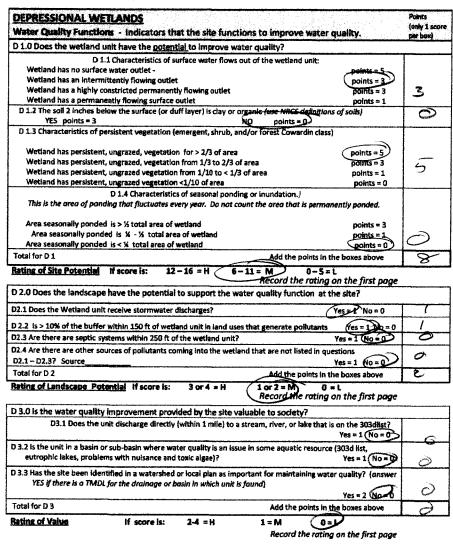
Wetland name or numb

> 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	HGM Class to Use in Antine
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



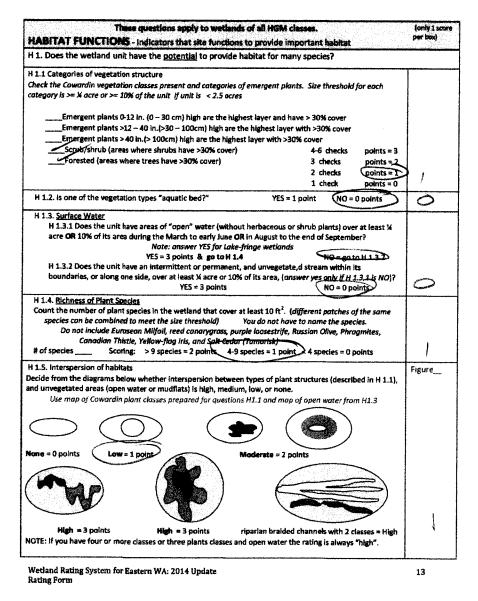
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5



DEPRESSIONAL WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flood	ling and stream erosion.	Points (only 1 score per box)
D 4. 0 Does the wetland unit have the potential to reduce flooding and erosion	ni ya shika ni kata na shika sa shika. IY	and the second
D 4.1 Characteristics of surface water flows out of the wetland unit:	***	
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	4
Wetland has a permanently flowing surface outlet (if outlet is a ditch and not permanently flowing treat unit as "intermittently flow	points = 0	7
D 4.2 Depth of storage during wet periods Estimate the height of ponding above to units with no outlet measure from the surface of permanent water or deepest pa		
Seasonal ponding: => 3 ft above the lowest point in unit or the surface of permane		
Seasonal ponding: 2 ft -< 3 ft above the lowest point in unit or the surface of perm	nament 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	$\circ$
Seasonal ponding: <6 in orr unit has only saturated soils	(points = 0)	
	e points in the boxes above	5
Rating of Site Potential If score is: 12-16 = H 6 - 11 = M Record the	(0-5=1)	
D 5.0 Does the landscape have the potential to support hydrologic functions at		
D5.1 Does the unit receive any stormwater discharges?	Yes = I No = 0	1
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates r	unoff? Yes = 1 0 = 0	
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with inte	nsive human land uses? Yes = $1 \text{ No} = 0$	0
Total for D 5 Add the points in the boxes above		2
Rating of Landscape Potential If score is: 3 = H (1,2 = M) Record th	0 = L he 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 is in a landscape that has flooding problems?		
Choose the description that best matches conditions around the wetland unit being rat	ed. Do not add points.	
Choose the highest score if more than one condition is met.		
U The wetland captures surface water that would otherwise flow downgradient in	nto areas where flooding	
has damaged human or natural resources (e.g. salmon redds), AND		
o Damage occurs in sub-basin that is immediately downgradient of unit	points=2	
o Damage occurs in a sub-basin further down-gradient	points = 1	
11 The existing or potential outflow from the wetland is so constrained by human of the water stored by the wetland cannot reach areas that flood.	or natural conditions that	1
Explain why	paints = 0	
it 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 conveyan control plan?	ce in a regional flood Yes = 2 No = 0	4
	ints in the boxes above	,
Rating of Value If score is: 2-4 = H 1= M	0 = L	/
Record the Wetland Rating System for Eastern WA: 2014 Update Rating Form	rating on the first page (	i

# Wetland name or number\_\_\_\_\_E



	Ē
Wetland name or number	•

H 1.6. Special Habitat Features;				
check the habitat features that are pr				1
Loose rocks larger than 4" or large, do ponding or in stream.	wned, woody debris (	>4in. diameter) within	the area of surface	
Catalis or bulrushes are present within	n the unit			
Standing snags (diameter at the bottom		etland unit or within 30	m (100ft) of the artes	
Emergent or shrub vegetation in areas	that are permanently	rinundated/ponded.	in (zoon) of the cage.	
Stable steep banks of fine material tha			nning (>45 degree	
slope) OR signs of recent beaver activ				
Invasive species cover less than 20% in	n each stratum of veg	etation (conopy, sub-co	nopy, shrubs,	>
herbaceous, mass/ground cover)		Maximui	n score possible = 6	
H 1. TOTAL Score -		Add the check marks i	n the box above	5
Rating of Site Potential If score is	i: 12-16 = H	6 - 11 = M	0-5=L)	
		Record the rat	ing on the first page	
H 2.0. Does the landscape have the pot	ential to support ha	abitat at the site?		
H 2.1 Accessible habitat (only area of habita				
% undisturbed habitat + {(% mode			%	
If total accessible habitat is:				
> 1/3 (33.3%) of 1km circl	e (~100 hectares)		doints = 3	1
20 - 33% of 1km circle			points = 2	
10- 19% of 1km circle			points = 1	<u>ک</u>
<10% of 1km circle			points = 0	
H2.2 Undisturbed habitat in 1km circle arou	nd unit. If:			
Undisturbed habitat > 50%	of circle		points = 3	
Undisturbed habitat 10 - 50	0% and in 1-3 patches		points = 2)	
Undisturbed habitat 10 - 50	• • • •		points = 1	2
Undisturbed habitat < 10%	•		points = 0	
H2.3 Land use intensity in 1 km circle. If:		<del></del>		
> 50% of circle is high inter	nsity land use		points = (- 2)	: A start to
Does not meet criterion ab			points = 0	0
The wetland unit is in an area when	e annual rainfall is les	s than 12 inches, and I	the second s	
influenced by irrigation practices, dan				
boundaries of reclamation areas, irrig				410 m
Total for H 2		the boxes above		÷.
Rating of Landscape Potential If score	7	1-3 = M	<1=i	,
	and the second s	Record the ra	ting on the first page	
H 3.0 Is the Habitat provided by the site	veluchie to tosiete		any on the just page	
	and the second			
H3.1Does the site provides habitat for specie	es valued in laws, regi	ulations or policies r (ch		
Site meets ANY of the following criteria:	• • • • • • • • • • • • •		points = 2	
It provides habitat for Threatened or		(any plant or animal on	state or rederal lists)	
ft is a "priority area" for an individua				
it is a Wetland With a High Conserva it has 3 or more priority habitats wit			or Natural Resources	
it has been categorized as an import			and the state of t	
Shoreline Master Plan, or in a wate		cal or regional compre	iensive plan, in a	
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	
Rating of Value If score is:	(2=H)	1 = M	0 = L	
	and the second s	Record the ra	ting on the first page	
Wetland Rating System for Bastern WA: 2	014 Update			14
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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 apphy. NOTE: All units should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the	
appropriate criteria are met.	
SC 1.0 Vernal pools	
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	
vegetation is typically upland annuals. NOTE: If you find perennial,	
"obligate", wetland plants the wetland is probably NOT a vernal pool	1
The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay.	
YES = Go to SC 1.1 NO - not a vernal pool	
SC 1.1 is the vernal pool relatively undistyrbed in February and March?	
YES = Go to SC 1.2 NO $-$ not a vernal pool with special characteristics	
SC 1.2 is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	Cat. Ii Cat. Ili
SC 2.0 Alkali wetlands	
Does the wetland unit meets one of the following two criteria?	
- The wetland has a conductivity > 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.	
OR 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 % of the plant cover consists of species listed on Table 4	
<ul> <li>A pH above 9.0. All alkali wetlands have a high pH, but please note that</li> </ul>	
some freshwater wetlands may also have a high pH. Thus, pH alone is not	
a good indicator of alkali wetlands	Cat. I
YES = Category   NO - not an aikali wetland	

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

SC 3.0 Wetlands with High Conservation Value (WHCV)	
SC 2.1 Has the Department of Natural Resources updated their web site to include the list of	
Wetlands with High Conservation Verue?	
YES - Go to SC 2.2 NO - Go to SC 2.3	Cat.I
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?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwettends.pdf	
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 an WHCV	
SC 4.0 Bogs and Calcareous Fens	
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	
soll profile? (See Appendix C for a field key to identify organic solls)?	
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 voicanic	
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 mosses at ground level	
AND at least 30% of the total plant cover consists of species in Table 5?	
Yes – Category I bog No - go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory you may	
substitute that criterian 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 (> 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	Cat. I
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;	
Mari deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant	
stems	
• The pH of free water $\geq$ 6.8 AND electrical conductivity $\geq$ 200 uS/cm at multiple locations	
within the wetland	:
Yes - is a Category I calcareous fen No - is not a calcareous fen	Cat. I

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

SC 5.0 Forested Wetlands		
Does the wetland unit have an area	of forest rooted within its boundary that meets at least	
-	ia? (Continue only if you have identified a forested class is	
present in question H 1.1)		
<ul> <li>The wetland is within the "1</li> </ul>	00 year" floodplain of a river or stream	
<ul> <li>aspen (Populus tremulaides) species</li> </ul>	represents at least 20% of the total cover of woody	
- There is at least ¼ acre of tre	ees (even in wetlands smaller than 2.5 acres) that are	
"mature" or "old-growth" ad	cording to the definitions for these priority habitats	
developed by WDFW (see d		
YES = go to SC 5.1 NO-no	a forested wetland with special characteristics	
	orest canopy where more than 50% of the free species (by	
cover) are slow growing native tr	ees (see Table 7)	Cat. i
YES = Category I	$NQ = go to SC 5 Z^{(1)}$	
	e aspen (Populus tremuloides) represents at least 20% of	Cat. I
the total cover of woody species		
YES = Category I	(NO = go to SC 5.3)	
SC 5.3 Does the wetland unit have are	eas with a forest canopy where more than 50% of the tree	
species (by cover) are fast growing		Cat. II
YES = Category II	NO = go to SC SS	
SC 5.4 Is the forested component of the stream?	he wetland within the "100 year floodplain" of a river or	
YES = Category II		Cat. II
Category of wetland based on Sp	arial Characteristics	
가슴 모님 가슴 가지는 것 같은 것을 다니는 것이 같이 많이	highest" rating if wetland falls into several categories.	NIA
그는 것 같은 것 같이 있는 것 같은 것 같은 것 같은 것 같은 것 같은 것 같은 것 같이 없다.	서 국내는 것 같은 것 같아요. 아무리는 것 같아요. 그 것은 것은 것 같아요. 그 것 같아요. 그 것 같아요. 그 귀구가 가지 않는 것 같아요. 나는 물	IVM
II YOU an	swered NO for all types enter "Not Applicable" on p.1	

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://wilfw.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: <u>Old-growth east of Cascade crest</u>: 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. <u>Mature forests</u>: 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 Rating System for Eastern WA: 2014 Update Rating Form

F Wetland name or number

# 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

	Cate Cate Pate	gory gory gory	l - To II - To III - To	otal : otal s otal s	d on f score = score = score = score =	= 22 = 19 = 16	- 27 - 21 - 18	INS			Score for each function based on three ratings (order of ratings is not important)
FUNCTION	1 - K. G. G.		ding unity cle the	1	<b>ydrolc</b> ppropri		rati	Habit	<b>at</b>		9 = H,H,H 8 = H,H,M 7 = H,H,L
Site Potential	TH (	M		H	M /	R	TH I	M	$\widehat{\mathbf{n}}$		7 = H,M,M
Landscape Potential	н	M	Ì	H	M	Ŕ,	h	M	4		6 = H,M,L 6 = M,M,M
Value	н	M	0	н	M)	<u> </u>	TH)	м	L		5 = H,L,L
Score Based on Ratings		4			4			7		15	S = M,M,L 4 = M,L,L 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHAMACTERISTIC	CATEGONY Circle the oppropriate category
Vernal Pools	11 111
Alakali	l
Wetland with high conservation value	1
Bog	I
Old Growth or Mature Forest - slow growing	I
Aspen Forest	1
Old Growth or Mature Forest - fast growing	n
Floodplain forest	11
None of the above	

Wetland Rating System for Eastern WA: 2014 Update **Rating Form** 

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

#### **Depressional Wetlands**

Map of:	To ensure 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**

Mapin	To answer questions: Figure #
Cowardin plant classes and classes of emergents	H1.1, H1.4
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	L1.1, L4.1, H1.1, H1.4	
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)	L3.1	
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)	\$ 4.1	
Boundary of 150 ft buffer (can be added to another figure)	\$ 2.1, \$ 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)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	\$ 3.3	

Wetland Rating System for Eastern WA: 2014 Update **Rating** Form

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## **HGM Classification of Wetland Units in Eastern Washington**

For questions 1-4 the oriteria described must apply to the entire unit being rated for it. to be classified correctly. If the hydrologic criterie listed is 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 S.

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 OUESTIONS 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 Rating System for Eastern WA: 2014 Update 3 **Rating Form** 

Wetland name or number

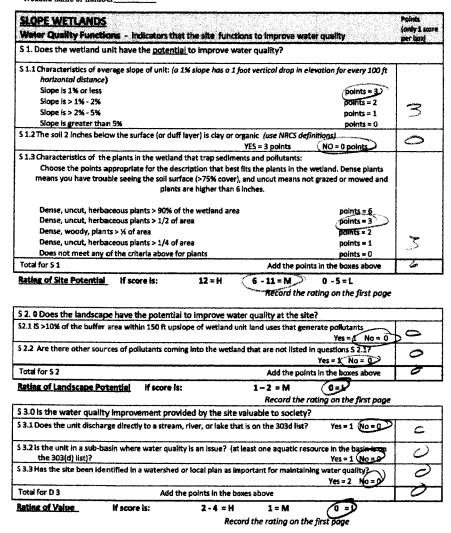
classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit: classify the wetland using the class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

HGM Closures within the wetland with being rated	HGM Class to Use in Reting
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.

4

Wetland name or number



Wetland Rating System for Eastern WA: 2014 Update Rating Form

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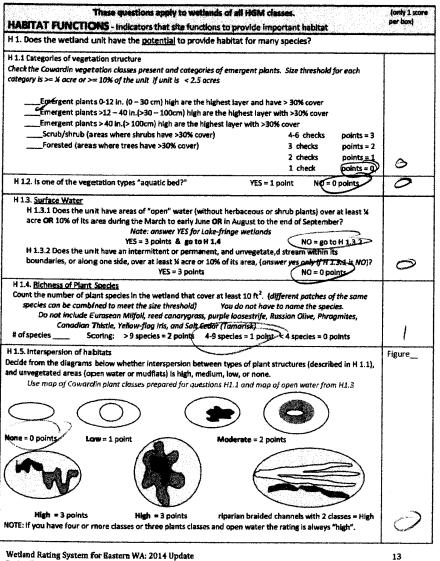
SLOPE WETLANDS Hydrologic Functions - i erosion	Indicators that the site functions to reduce flooding ar	Points (only 1 s (of stream per tou)	228 gala
S 4.0 Does the wetland unit	t have the <u>potential</u> to reduce flooding and stream erosion	?	
S 4.1 Characteristics of plants appropriate for the des	t have the <u>potential</u> to reduce flooding and stream erosion that reduce the velocity of surface flows during storms. Choose cription that best fit conditions in the wetland. (Stems of plants s n), or dense enough, to remain erect during surface flows)	the points	
S 4.1 Characteristics of plants appropriate for the des enough (usually > 1/8 in	that reduce the velocity of surface flows during storms. Choose cription that best fit conditions in the wetland. (Stems of plants s n), or dense enough, to remain erect during surface flows) ts covers > 90% of the area of the wetland.	the points	

\$ 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			0	
Rating of Landscape Potential	If score is:	1 = M Record the	0 = 1 e rating on the first page	

S 6.0 Are the hydrolog	ic functions provid	ed by the site va	luable to society?		
S 6.1 Distance to the nea	rest areas downstre	am that have floor	ling problems	-	
The sub-basin i	mmediately down-g	adient of site has	surface flooding problem	s that results in	
damage to hum	an or natural resour	ces		points = 2	
Surface flooding	s problems are in a si	ub-basin further d	own-gradient	points = 1	•1
No flooding pro	blems anywhere dow	vnstream		points = 0	V
S 6.2 Has the site has be	en identified as impo	ortant for flood co	nveyance in a regional flo	od control plan? Yes = 2 No = 0	0
Total for S 6			Add the poir	its in the boxes above	7
Rating of Value	If score is:	2-4×H	1 = M Record the rati	0 = L ing on the first page	

NOTES and FIELD OBSERVATIONS:

	F
Wetland name or number	<u>/</u>



**Rating Form** 

Wetland name or number

Wetland name or number		
H 1.6. Special Habitat Features:		
Aneck the habitat features that are present in the wetlar	d unit. The number of checks is the score.	
Loose rocks larger than 4" or large, downed, woody debris (>4in. diameter) within the area of surface		
ponding or in stream.		
Cattalls or buirushes are present within the unit.		
Standing snags (diameter at the bottom > 4 inches) in the		
Emergent or shrub vegetation in areas that are permanent		
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		3
invasive species cover less than 20% in each stratum of v		1
herbaceaus, moss/ground caver)	Maximum score possible = 6	
H 1. TOTAL Score -	Add the check marks in the box above	
Rating of Site Potential If score is: 12 - 16 = 1	A 6 - 11 = M 0 - 5 = Record the rating on the first page	
H 2.0. Does the landscape have the potential to support	habitat at the site?	
H 2.1 Accessible habitat (only area of habitat abutting wetland		
% undisturbed habitat + [(% moderate and low inten	sity 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	2
H2.2 Undisturbed habitat in 1km circle around unit. If:		
Undisturbed habitat > 50% of circle	points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patc	les Solote-P	
Undisturbed habitat 10 - 50% and > 3 patches	• • • • • •	10 100 miles
Undisturbed habitat < 10% of circle	points = 0	2
H2.3 Land use intensity in 1 km circle. If:		
> 50% of circle is high intensity land use	points = (+,2)	
Does not meet criterion above	noints = 0	
The wetland unit is in an area where annual rainfall is		
influenced by irrigation practices, dams, or water control		Contraction of the second
boundaries of reclamation areas, irrigation district, or re		- California
	in the boxes above	try
Rating of Landscape Potential If score is: 4-6=	1-3=M <1=L	
A Company of the Comp	Record the rating on the first page	
H 3.0 Is the Habitat provided by the site valuable to socia	·····	
H3.1Does the site provides habitat for species valued in laws, a		
Site meets ANY of the following criteria:	points = 2	
it_provides habitat for Threatened or Endangered spec		
The sa "priority area" for an individual WDFW species	rea tony provid of annihal on scale of redetal ISIS)	
it is a 'priority area for an individual worw species it is a Wetland With a High Conservation Value as dete	rmined by the Department of Natural Berguran	
it has 3 or more priority habitats within 100m (see App		
it has been categorized as an important habitat site in		
that been categorized as an important natital site in Shoreline Master Plan, or in a watershed plan	a locar or regional comprehensive plan, in a	
Site has 1 or 2 priority habitats within 100m (see Appendix E	points = 1	
Site does not meet any of the criteria above	points = 0	
Rating of Value If score is: (2 = H)	1=M 0=L	

Record the rating on the first page

Wetland Rating System for Eastern WA: 2014 Update **Rating** Form

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## **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
Check off any criteria that apply to the wetland. Circle the Category when the	
appropriate criteria are met.	
SC 10 Vernal pools	
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	
<ul> <li>Wetland plants are typically present only in the spring; the summer</li> </ul>	
vegetation is typically upland annuals. NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool	
<ul> <li>The soil in the wetland are shallow (&lt;1ft deep (30 cm)) and is underlain by</li> </ul>	
an impermeable layer such as basait 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 1.2NO - not a vernal pool with special characteristics	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)?	Cat. II
YES = Category II NO = Category II	Cat. III
SC 2.0 Alkali wetlands	
Does the wetland unit meets one of the following two criteria?	
The wetland has a conductivity > 3.0 mS/cm.	
of the plant cover in the wetland can be classified as "alkali" species (see	
Table 4 for list of plants found in alkali systems).	
area is covered with a layer of salt.	
OR does the wetland unit meets two of the following three sub-criteria?	
Salt encrustations around more than 80% of the edge of the wetland	
<ul> <li>More than ¼ of the plant cover consists of species listed on Table 4</li> </ul>	
- 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 olkali wetland	Cat. I

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

	r
SC 3.0 Wetlands with High Conservation Value (WHCV)	
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	Cat. I
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?	
http://www1.dnr.wa.goy/nhp/refdesk/datasearch/whithpwettands.pdf	
YES contact WNHP/DNR and go to SC 2.4 NQ = not a WHCY	
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	1
SC 4.0 Bogs and Calcareous Fens	ł
Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and	ļ
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.	Į
SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic	
soll), 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	1
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 mosses at ground level	
AND at least 30% of the total plant cover consists of species in Table 57	
Yes Category I bog No go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory you may	
substitute that criterion by measuring the pH of the water that seeps into a hole dug at	
least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the	
wetland is a bog.	
SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red	
cedar, western hemlock, lodgepole pine, quaking aspen, 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	Cat. I
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:	
<ul> <li>Marl deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant</li> </ul>	
stems	
<ul> <li>The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations</li> </ul>	
within the wetland	
Yes is a Category i calcareous fen No - Is not a calcareous fen	Cat. i

## Wetland name or number\_3

SC 5.0 Forested Wetlands		I
Does the wetland unit have an area of forest roo	ted within its houndary that meets at least	
	e anly if you have identified a forested class is	
present in question H 1.1)		
<ul> <li>The wetland is within the "100 year" floc</li> </ul>	dplain of a river or stream	
<ul> <li>aspen (Populus tremuloides) represents a species</li> </ul>		
There is at least ¼ acre of trees (even in t	wetlands smaller than 2.5 acres) that are	
"mature" or "old-growth" according to th	e definitions for these priority habitats	
developed by WDFW (see definitions in a	puestion H3.1)	
YES = go to SC 5.1 NO-not a forested v		
SC 5.1 Does the wetland unit have a forest canopy		
cover) are slow growing native trees (see Tab	ie 7)	Cat. I
YES = Category I NO	= go to \$C 5.2	
SC 5.2 Does the unit have areas where aspen (Poj	pulus tremuloides) represents at least 20% of	Cat. i
the total cover of woody species.		
YES = Category I NO	= go to SC 5.3	
SC 5.3 Does the wetland unit have areas with a for	est canopy where more than 50% of the tree	
species (by cover) are fast growing species. (		Cat. il
YES = Category II NO	= go to \$C 5.5	
SC 5.4 Is the forested component of the wetland w stream?	vithin the "100 year floodplain" of a river or	
YES = Category II		Cat. II
그는 물건에 많이 다니 것 같아요. 그는 것 같아요. 그는 것은 것 같아요. 말했다. 그는 것	<b>teristics</b> ing if wetiand fails into several categories. for all types enter "Not Applicable" on p.1	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: <u>Old-growth east of Cascade crest</u>: Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and solls. 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. Canoples may be single or multi-layered. Evidence of hurman-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u>: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decidence, 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.

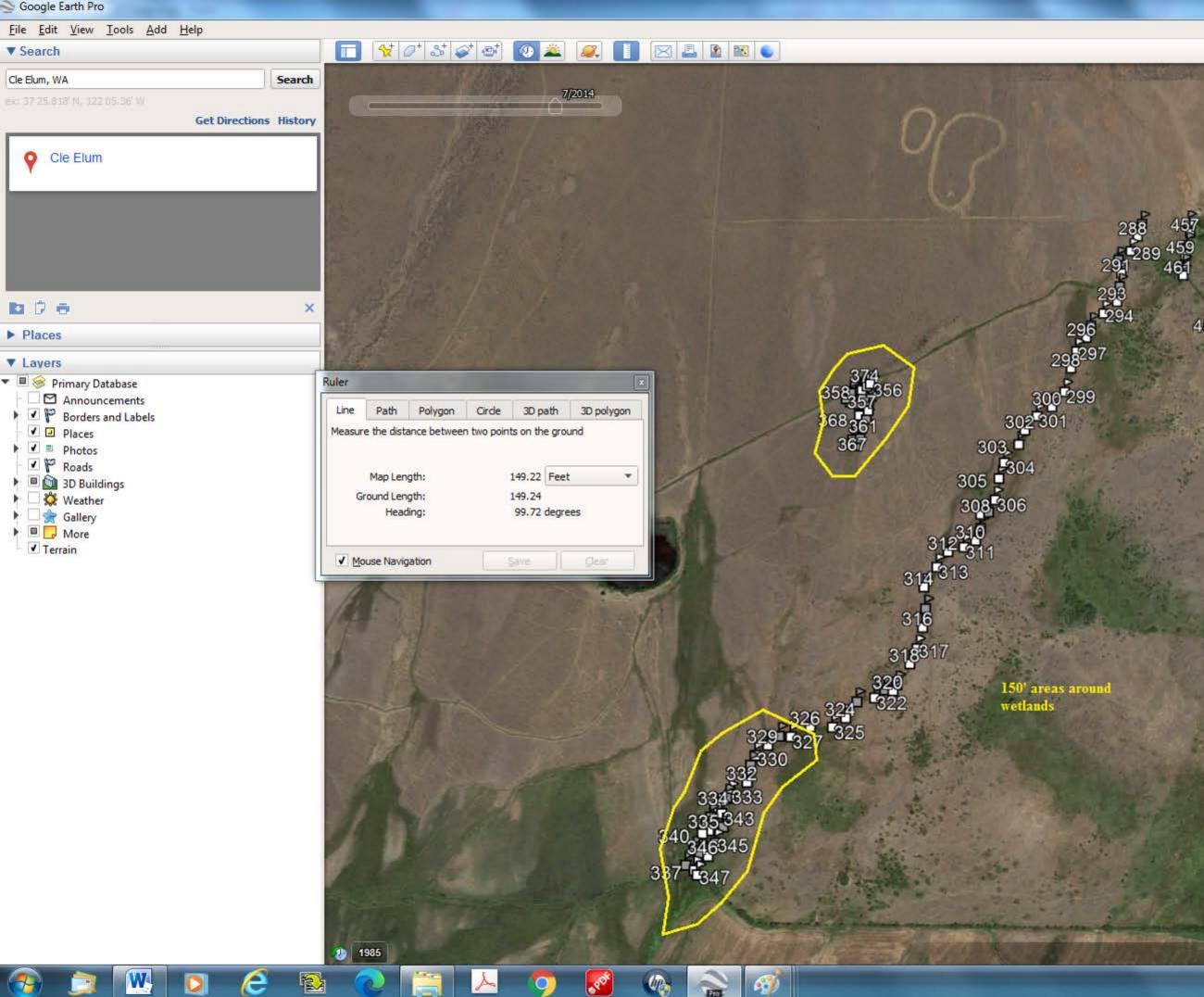
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, and site, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

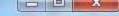
\_\_\_\_Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs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

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.





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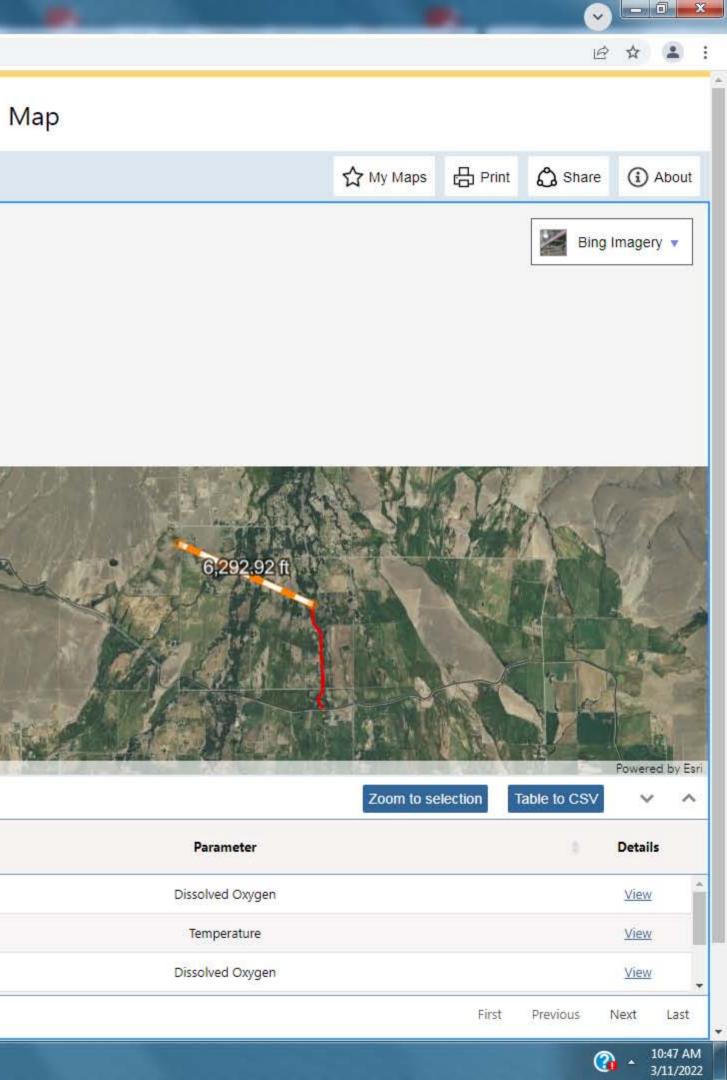
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✓ Drawing		
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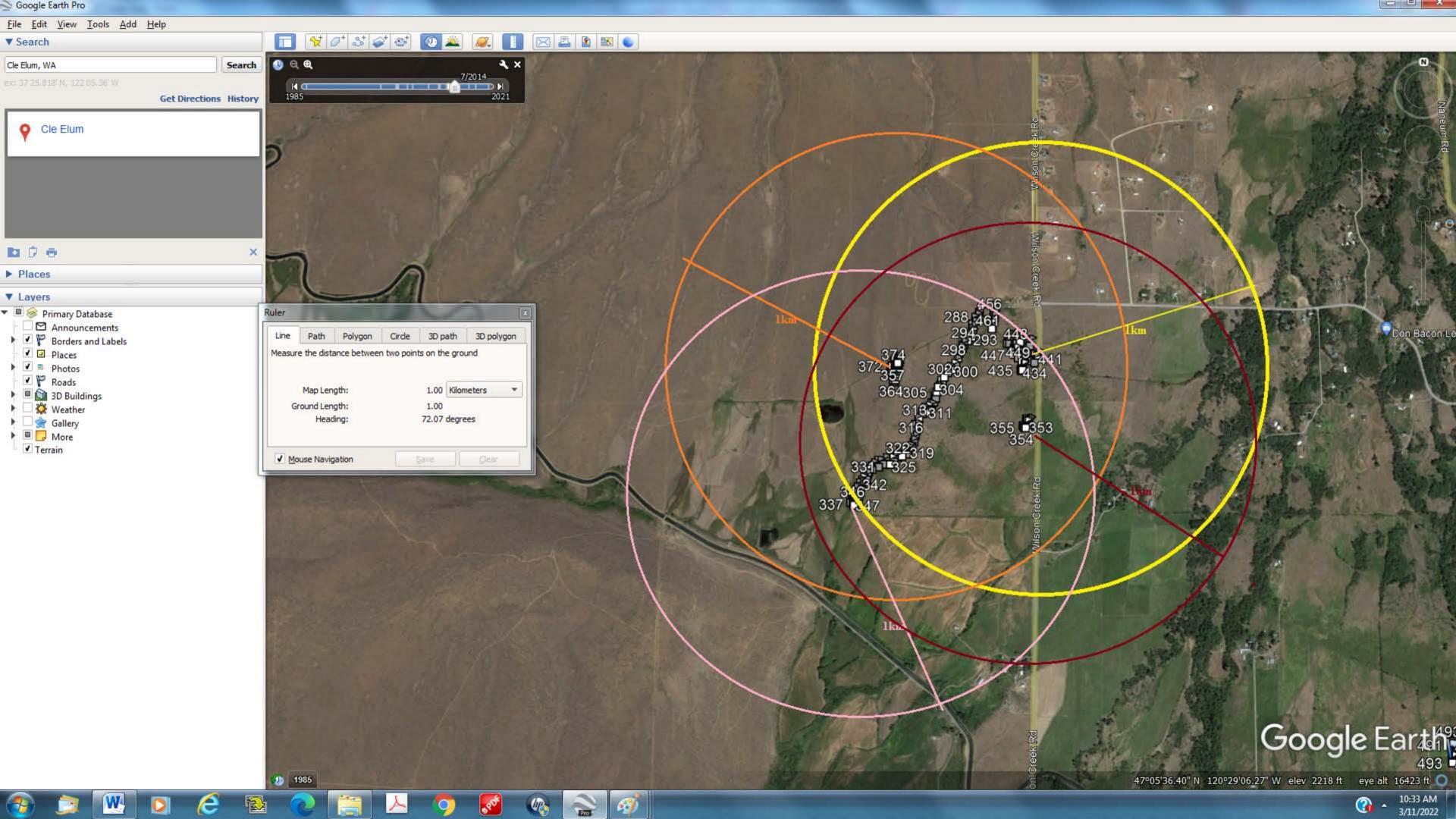
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