

# **Sewall Wetland Consulting, Inc.**

PO Box 880 Fall City, WA 98024 Phone: 253-859-0515

March 22, 2022

Mike & Debbie Stanavich 8400 Smithson Road Ellensburg, Washington 98926

RE: Critical Area Report – Stanavich Agricultural Plat Parcels #14217 & 10729 Kittitas County, Washington

SWC Job #22-114

Dear Mike & Debbie,

This report describes our observations of any jurisdictional wetlands, streams and/or buffers on or within 200' of Parcels #14217 & 10729, located at 8400 Smithson Road, in unincorporated Kittitas County, Washington.



Above: Vicinity Map of site

These two abutting parcels are located within the NW ¼ of Section 35 Township 19 North, Range 18 East of the W.M in Kittitas County, Washington. Specifically, the rectangular 81 acre agricultural site includes a single family home, shop, septic system, and associated landscaping and gravel driveway/parking surfaces.



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

## **Proposed Project**

The proposed project is the division of the property as an Agricultural Plat, with 5 separate parcels. Parcel A (40 acres) on the western half of the site will remain in agriculture. Parcels B & C are two 3 acre parcels along the central side of the site for single family homes. Parcel D is a 19.6 acre parcel to contain the existing home and shop. Parcel E is a 15.38 acre parcel on the east for a single family home. Since the western half of the site is to remain in agriculture, the focus of the study was on the areas of Parcels B, C and E where a future single family home could be placed.

#### **METHODOLOGY**

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site and areas within 200' of the site on April 22 and March 2, 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 the City of Ellensburg 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 a Type F stream (Currier Creek) along the southeast corner of the site, as well as a second un-named tributary passing through the center of the site, also a Type F water. The eastern half of the site is erroneously depicted as a large emergent wetland.



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

## National Wetlands Inventory (NWI)

The NWI map depicts the same wetlands and streams as the Kittitas County website. Several of the irrigation ditches on the site are incorrectly mapped as streams. The Kittitas Taxsifter mapping was taken from these NWI maps. These wetlands were interpreted from aerial photographs by the US Fish and Wildlife Service using 2017 aerial photographs with no ground-truthing.



Above: NWI map of the area of the site

## **Soil Survey**

According to the NRCS Soil Mapper website, the site is mapped as containing several well-drained and moderately well drained soil series including Metmill very gravelly ashy loam (Map unit #844), Reeser-Reelow-Sketter complex (Map unit #843), Varodale clay (Map unit #585) and Pacheun ashy loam (Map unit #554). 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, the main irrigation ditch on the north side of the site is mapped as an "unclassified stream", Currier Creek on the southeast corner is mapped as a Type F stream, and the un-named tributary across the center of the site is also depicted as a Type F stream.



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 same streams and wetlands identified on the NWI and WDNR Fpars mapping.



Above: WDFW Priority Habitat Mapping of the site. Purple shading represents wetlands on this map and red streams/ditches.

#### Field observations

As previously described, the site is a large agricultural property currently used to grow timothy hay on the west, and graze livestock on the east. A single family home and shop are located on the north part of the eastern half of the site. This includes a gravel driveway, large gravel parking surfaces, as well as associated landscaped areas, and septic system. A man-made agricultural pond is located east of the driveway near the north end of the site. Water from the irrigation ditch north of the pond is a source of water for the pond. The site has a gentle slope to the south and is bordered by Smithson Road on the north and Robbins Road on the west. Agricultural properties abut the east and southern sides of the site.

The western half of the site used to grow timothy hay is irrigated with a wheel irrigation system. The eastern half receives water from the KRD canal in a main irrigation ditch that crosses the north side of the site and has several turnouts/side ditches. There are also several irrigation turnouts from Currier Creek on the eastern side of the site that direct water westerly to water the southern side of the site. These have all been used to maintain forage grasses for livestock when they are used for grazing.

Currently, only the western side of the site with wheel irrigation is actively irrigated. The eastern irrigation channels with the exception of the main irrigation canal on the north side of the site are not currently active and flow has been blocked off to these areas to ascertain wetland hydrologic conditions which are natural, from those which are just irrigation induced.

### **Uplands**

The majority of the site on the east is vegetated with scattered hawthorne and rose with a mix of pasture grasses including tall fescue, timothy, quackgrass, and in areas that receive irrigation water, some sedge and Baltic rush. The area along the eastern side of the site bordering Currier Creek contains scattered willows (both coyote willow and crack willow), alder, hawthorne and some reed canary grass.

The soils throughout the agricultural fields were found to be a dry, cobbly ashy loam or gravelly loam with soil chromes of 2 or 3. Redoximorphic features were present in areas that historically received irrigation water. However, this irrigation has ceased to flow to these areas and as a result, these soils remain dry all year. This dry upland area includes most of the area depicted as wetland on the eastern side of the site in the various inventories. As is typical for this portion of Kittitas County, the NWI, Kittitas County and WDFW Priority habitat maps depict much irrigated agricultural lands erroneously as wetlands.

### **Critical Areas**

A single wetland was found on the south side of the site, in addition to Currier Creek along the southeast side of the site and the un-named tributary on the center of the site (see Map page 13 of this report). Below is a description of these critical areas;

#### **Wetlands**

## Wetland A

Wetland A is located on the southeast side of the site where it appears a naturally high, surficial groundwater is shallow enough in the upper part of the soil profile to create wetland conditions, This includes a large area of emergent wetland, and on the south, a small patch of forested wetland just off-site to the south. Historically irrigation water from Currier Creek also contributed to this area, but has since been cutoff by blockage of the irrigation turnouts. Water in this wetland seeps to the south off-site where it is collected in an irrigation ditch that appears to form the south end of the wetland.

The north end of this wetland on the site was flagged with orange wire flags labeled A1-A12 (*qps points 383-395*).

The wetland is a depressional wetland and is dominated by sedge with some Baltic rush. The forested portion of the wetland consists of a large clump of crack willow with some coyote willow and sedge underneath the overstory.

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

redoximorphic concentrations. Soils saturated at the surface during our wet 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 5 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 activity have a 110' buffer measured from the wetland edge.

Table 17A.07.030: Standard Buffer Widths

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

#### Streams

### Currier Creek

As previously stated, Currier Creek passes along the southeast side of the site. The ordinary high water mark of the creek on the west side, towards the site, was flagged with blue flags labeled W1-W8 (*gps points* 375-382).

The stream is topographically well defined with a bank which is generally 3'-5' in elevation above the streambank. The bank is heavily vegetated with rose, coyote willow and hawthorn. The stream itself is 6'-8' in width with a cobble and gravel bottom.

Currier Creek is a known fish bearing water which would be classified as a Type F stream.

According to KCMC 17A.04.030.4, Type F streams have a 100' buffer measured from the ordinary high water mark in the Columbia Plateau region.

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

### *Un-named Tributary*

The mapped un-named tributary depicted as a Type F stream across the center of the site is a highly manipulated drainage with questionable flow. Flow on the site was not observed and it appears most if not all of the flow is diverted into irrigation turnouts. Portions of the channel were noted to have evidence of flow (flattened direction grasses) from the recent snowmelt that had occurred several weeks prior to our site visit, but the streamwas dry during our site visit and it is known how much if any flow this channel really has. There is a channel that is discernable, but much of it is grown over with weedy species like cheatgrass etc. and doesn't appear to have regular flow.

We delineated the centerline of this channel, which is generally about 18" wide with gps points 396-433.

The stream is questionable to whether flow is regular enough to be considered a stream, however, clearly fish use is not present in this channel.

As a result, this channel appears to best meet the criteria of a Type Ns water due to potential ephemeral flow, and a mean channel width of 18"

(less than the 3' channel width standard used as an assumption of fish use).

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

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

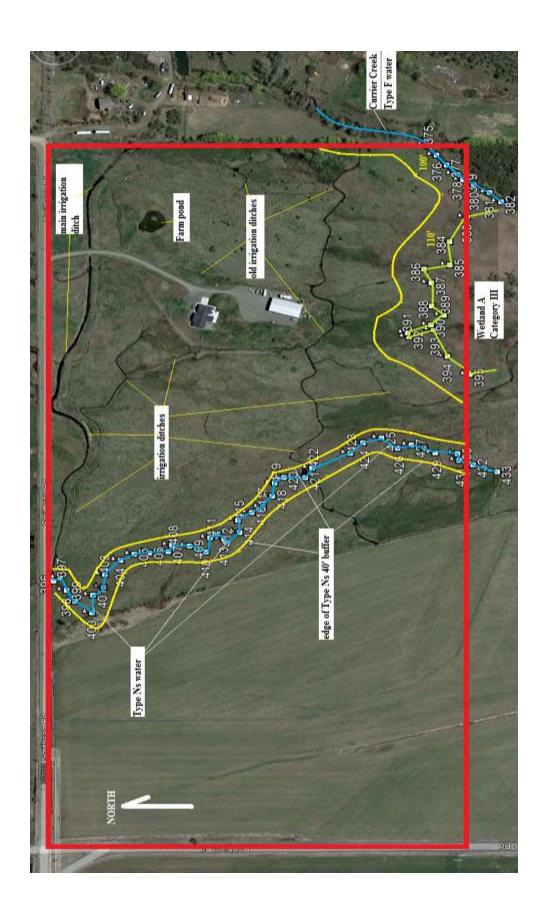
Sincerely,

Sewall Wetland Consulting, Inc.

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.

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

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

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

WETLAND DETERMINATION DATA FORM - Arid West Region Project/Site: Applicant/Owner: Ed Sewall Investigator(s): Section, Township, Range: Landform (hillslope, terrace, etc.): \_ Local relief (concave, convex, none): \_ \_\_\_\_\_ Long: \_\_\_ Subregion (LRR): Datum: Soil Map Unit Name: \_ ..... NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_ \_\_ No \_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? \_ No \_\_\_\_ is the Sampled Area Hydric Soil Present? Yes within a Wetland? Wetland Hydrology Present? \_\_ No \_\_ Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species = Total Cover That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: Prevalence Index worksheet: Total % Cover of: Multiply by: = Total Cover Herb Stratum (Plot size: \_ UPL species UpL Bronus tedurum Prevalence Index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is ≤3.01 Morphological Adaptations1 (Provide supporting date in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) = Total Cover Woody Vine Stratum (Plot size: <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. = Total Cover Hydrophytic Vegetation % Bare Ground in Herb Stratum\_\_\_\_\_\_ % Cover of Biotic Crust\_\_\_\_ Present? \_\_ No \_ Remarks:

Arid West - Version 2.0

US Army Corps of Engineers

SOIL		Sampling Point:
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(inches) Color (moist) %	Color (maist) % Type L	.oc <sup>2</sup> Texture Remarks
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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)
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Thick Dark Surface (A12)	Redox Depressions (F6)	Indicators of hydrophytic vegetation and
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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)		ng Roots (C3) Dry-Season Water Table (C2)
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Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
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Water Table Present? Yes	No Depth (Inches):	Later Control
Saturation Present? Yes	No Depth (Inches):	Wetland Hydrology Present? Yes No No
(Includes capillary fringe)		
Describe Recorded Data (stream gauge, m	onitoring well, serial photos, previous inspec	tions), if evellable:
Remarks:		

US Army Corps of Engineers Arid West - Version 2.0

WETLAND DETERMINATION DATA FORM -- Arid West Region Starkuich Project/Site: Applicant/Owner: \_ Ed Sewall Investigator(s): \_\_ Section, Township, Range: Landform (hillstope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none); Slope (%): \_\_\_ Subregion (LRR): Datum: \_\_ Soil Map Unit Name: .... NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_ \_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soi \_\_\_\_\_ or Hydrology \_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_ Are Vegetation \_\_\_\_\_, Solf \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any enswers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status **Number of Dominant Species** That Are OBL, FACW, or FAC: **Total Number of Dominant** Species Agross All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC; 0 = Total Cover (A/B) Senling/Shrub Stratum (Plot size: \_ Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species \_\_\_\_\_ x 1 = \_\_\_\_ FACW species \_\_\_\_\_ x2=\_\_\_ FAC species \_\_\_\_\_ x 3 = \_\_\_\_ FACU species \_\_\_\_ \_ x4=\_\_ \_ = Total Cover UPL species \_\_ \_ ×5=\_ 60 Column Totals: \_ (A) \_ 10 Pra week Prevalence index = B/A = \_ Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is ≤3.01 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) \_ = Total Cover Woody Vine Stratum (Plot size: indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. = Total Cover % Bare Ground in Herb Stratum % Cover of Biotic Crust \_ \_\_\_ No \_\_\_ Remarks:

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Type: Depth (Inches): emerks:  **TOROLOGY*  **Total Hydrology Indicate imary Indicators (Inchemum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nouril Sadiment Deposits (B2) (Drift Deposits (B3) (Nouril Surface Soil Cracks (B6) inundation Visible on Aer Water-Stained Leaves (Beld Observations:  **United Control	ora: of ane required; of overhee) (Nonriverine) tvertine) tel imagery (B7) 9) Yes No, Yes No	Salt Cruet (B11) Biotic Cruet (B12) Aquetic Invertebretes (B13) Hydrogen Suifide Odor (C1) Oxidized Rhizzepheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Other (Explain in Remarks)	ing Roots (C3) ioils (C6) Wetland Hyd	Secondary Indicators (2 or more realized)
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Type: Depth (Inches): emerks:  **TOROLOGY*  **Vetland Hydrology Indicate through Indicators (Iminhum. Surface Water (A1) High Water Table (A2) Seturation (A3) Weter Merks (B1) (Nonri- Sediment Deposits (B2) (Nonri- Sediment Deposits (B2) (Nonri- Surface Soil Creaks (B6) inundation Visible on Aeri- Water-Stained Leaves (B- eld Observations: urface Water Present? sturation Present? sturation Present? sturation Present? sturation Present?	ora: of ane required; of overhee) (Nonriverine) tvertine) tel imagery (B7) 9) Yes No, Yes No	Salt Cruet (B11) Biotic Cruet (B12) Aquetic Invertebretes (B13) Hydrogen Suifide Odor (C1) Oxidizad Rhizospheres elong Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Other (Explain in Remarks)  Depth (Inches): Depth (Inches):	ing Roots (C3) ioils (C6) Wetland Hyd	Secondary Indicators (2 or more realized)

WETLAND DETERMINATION DATA FORM - Arid West Region Project/Site: State: US Sampling Point: DP#3 Applicant/Owner: Ed Sewall investigator(s): \_\_ Section, Township, Range: \_ Landform (hillstope, terrace, etc.): Local relief (concave, convex, none): Stope (%): \_\_\_\_\_ Subregion (LRR): \_\_\_ \_\_\_\_\_ Long: \_\_\_ Datum: Soil Map Unit Name: NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No \_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sympling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Is the Sampled Area Hydric Soil Present? Yes \_\_\_\_ No \_\_ within a Wetland? Wattand Hydrology Present? Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet Tree Stretum (Plot size: % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC: **Total Number of Dominant** Species Across All Strats: Percent of Dominant Species ■ Total Cover That Are OBL. FACW. or FAC: (A/8) Santing/Shrub Stratum (Piot size: Prevalence Index worksheet: Total % Cover of: Multiply by: FACU species \_\_\_\_\_ = Total Cover UPL species \_\_ x5=\_ Bronus techen Column Totals: \_\_\_\_\_ Signbrim altissinm Prevalence Index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence index is ≤3.01 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) \_\_\_ = Total Cover Weody Vine Stratum (Plot size: findicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? \_ = Total Cover % Bare Ground in Herb Stratum % Cover of Bigtic Crust \_\_ No \_\_\_\_ Remarks:

	mix	Redox Features			
nches) Color (mo	<u> </u>	Color (maist) % Type		Texture	Remarks
8 10 m			<del></del>	<del></del>	
14 71541	2751		Cubby	1 am	
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	<del></del>				
ps: C=Concentration, D	-Depletion, RM=Re	duced Matrix, CS=Cevered or Cost	ed Sand Grain	rs. <sup>2</sup> Locatio	n: PL=Pore Lining, M=Mitrix.
dric Soll Indicators: (A	pplicable to all LRI	Rs, unless otherwise noted.)		indicators for	Problematic Hydric Solb <sup>3</sup> :
Histosol (A1)		Sandy Redox (85)			(A9) (LRR C)
Histic Epipedon (A2)		Stripped Matrix (S6)			(A10) (LRR 8)
Black Histic (A3)		Loamy Mucky Mineral (F1)		Reduced \	
Hydrogen Sulfide (A4)	99 a\	Loamy Gleyed Matrix (F2)			st Material (TF2)
Stratified Leyers (A5) ( 1 cm Muck (A8) (LRR I		Depleted Matrix (F3) Redox Dark Surface (F6)		unner (Exp	ilain in Remarks)
, 1 cm wuck (AB) (Likel) Depleted Below Dark S		Depleted Dark Surface (F7)			
Thick Dark Surface (A1		Redox Depressions (F8)		Sindicators of h	ydrophytic vegetation and
Sandy Mucky Mineral (		Vernal Pools (F9)			rology must be present
Sandy Gleyed Metrix (1					bed or problematic.
strictive Layer (if prese	- 1				
anienaa rakki (ii biasa	recj:		1		
	ritj: 	_			
Type: Depth (Inches):		-		Hydric Soli Pre	sent? Yes No
Type: Depth (Inches):	recj:			Hydric Sali Pre	sent? Yes No
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Type: Depth (inches): marks: DROLOGY ettend Hydrology Indica	tore:	neck all thet apply)			sent? Yes No
Type: Depth (Inches): marks: DROLOGY ettend Hydrology Indica	tore:	neck all thet apply)		Secondar	
Type:	tore:	Selt Crust (B11) Biotic Crust (B12)		Secondar Water Sedin	y indicators (2 or more required r Marks (81) (Riverina) nent Deposits (82) (Riverite)
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Type:	tors: n of one required; of riverine) ) (Nauriverine)	Selt Crust (B11) Biotic Crust (B12) Aquestic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along	Living Roots	Secondari — Water — Sedin — Onte to — Drain — (C3) Dry-S	y Indicators (2 or more resired Marks (81) (Riverine) nent Deposits (82) (Riverine) apposits (83) (Riverine) age Patterns (810) eason Water Table (C2)
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Type: Depth (Inches): marks:  DROLOGY  Illiand Hydrology Indica mary Indicators (minimus Surface Water (A1) High Water Table (A2) Seturation (A3) Water Marks (B1) (Non Sediment Deposits (B2) Drift Deposits (B3) (No) Surface Soil Cracks (B4)	tors: n of one required; ci riverine) (Nauriverine) Iriverine)	Salt Crust (B11) Biotic Crust (B12) Aquestic Invertabrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C Recent Iron Reduction in Tille	Living Roots	Secondari Water Sadin Drift I Dry-S Crayfi Satur	y indicators (2 pr more required r Marks (81) (Riverine) nent Deposits (82) (Riverine) Deposits (83) (Riverine) age Patterns (810) leason Weter Table (C2) ist Burrows (C8) ation Visible on Aerial Imspery
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Type: Depth (Inches): marks:  DROLOGY  Illiand Hydrology Indica mary Indicators (minimur Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nen Sediment Deposite (B3) (Nio Surface Soil Cracks (Bt inundation Visible on A Water-Stained Lesves in did Observations: rface Water Present? Iter Table Present? Iteration Present? Iteration Present? Interded (A)	tors: n of one required; ch riverine) (Nouriverine) riverine) (Nouriverine) riverine) (Nouriverine)	Selt Crust (811) Biotic Crust (812) Aquestic Invertebrates (813) Hydrogen Sulfide Odor (C1) Oxidized Rhizespheres along Presence of Reducad Iron (C Recent Iron Reduction in Tilit Thin Muck Surface (C7) Other (Explain in Remarks)  Bepth (Inches): Depth (Inches):	i Living Roots 4) ad Solis (C6)	Secondari — Water — Sedin — Drah — Drah — C3) — Dry-S — Crayff — Satur — Shafe — FAC-I	y indicators (2 pr more required r Marks (81) (Riverine) nent Deposits (82) (Riverine) apposits (83) (Riverine) app Patterns (810) leason Weter Table (62) lets Burrows (68) attion Visible on Aerial Imagery on Aquitard (03)

Arid West -- Version 2.0

WETLAND DETERMINATION DATA FORM - Arid West Region Project/Site: Applicant/Owner: Ed Sewall Investigator(s): \_ Section, Township, Range: Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%): \_\_\_ Subregion (LRR): \_\_\_\_ \_\_\_\_\_ Long: \_\_ Datum: \_\_\_ Soil Map Unit Name: .... NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No \_\_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? is the Sampled Area Hydric Soil Present? Yes \_\_\_\_\_ No \_\_\_ within a Wetland? Watland Hydrology Present? No\_ Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC: **Total Number of Dominant** Species Across All Strata: Percent of Dominant Species \_ = Total Cover That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species \_\_\_\_\_ x1 = \_\_\_\_ FACW species \_\_\_\_ x 2 = \_\_\_ FAC species x3= \_\_ = Total Cover FACU species UPL species Blooms techn 40 Column Totals: \_\_\_\_ Prevalence Index = B/A = Hydrophytic Vegetation indicators: Dominance Test is >50% Prevalence Index is ≤3.01 Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation\* (Explain) \_\_\_ = Total Cover Woody Vine Stratum (Plot size: findicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vogetation Present? \_\_ = Total Cover % Bare Ground in Herb Stratum\_\_\_\_ \_\_\_\_ % Cover of Biatic Crust \_\_ \_\_ No \_\_\_ Yes Remarks:

Hydric Soll Indicators: (Applicable to all LRRa, unless otherwise noted.)  Histopool (A1)  Histopool (A2)  Black Histic (A3)  Hydrogen Suifide (A4)  Hydrogen Suifide (A4)  Loamy Mucky Mineral (F1)  Red Stretified Matrix (F2)  1 orn Muck (A9) (LRR C)  Depleted Matrix (F3)  Oth  1 orn Muck (A9) (LRR D)  Redox Dark Surface (F6)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Gleyed Matrix (S4)  Restrictive Layer (Ff present):  Type:  Depth (Inches):  Primary Indicators (minimum of one required: check sit that sooly)  Seturation (A3)  Water Marks (B1) (Nonthvertee)  Sediment Deposits (B2) (Noentvertine)  Drift Deposits (B3) (Nonthvertine)  Surface Soil Cracks (B6)  Inundation Visible on Aerial Imagery (B7)  Wester Stable (Descriptions)  Presence of Reduced Iron (C4)  Inundation Visible on Aerial Imagery (B7)  Wester Table Present?  Yes  No  Depth (Inches):  Depth (Inches):  Presence of Reduced Iron (C4)  Depth (Inches):  Presence (G7)  Water Present?  Yes  No  Depth (Inches):  Depth (Inches):  Presence (Freduced Iron (C4)  Depth (Inches):  Presence (G7)  Water Present?  Presence (Freduced Iron (F6)  Depth (Inches):  Depth (Inches):  Presence (Freduced Iron (F6)  Depth (Inches):  Presence (F7)  Presence (F7)  Princh Deposits (F7)  Princh Depo	Remarks
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Costed Sand Grains.    Provide Soll Indicators: {Applicable to all LRRa, unless otherwise noted.}   Indicators: {Applicable Layers (AS)   Strainformation (AS)   Strainformation (AS)   Indicators: {Applicable Layers (AS)   LRR C)   Strainformation (AS)   LRR C)   Depleted Matrix (F3)   Other (As) (LRR C)   Depleted Matrix (F3)   Other (As) (LRR C)   Depleted Dark Surface (F6)   Depleted Balow Dark Surface (A11)   Depleted Dark Surface (F6)   Indicators: {Accepted Matrix (S4)   Sandy Mucky Mineral (S1)   Vernal Pools (F9)   Vernal Pools	tion and a
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Costed Sand Grains.    Provide Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)   Indicators	
ydric 3oft indicators: (Applicable to all LRRs, unless otherwise noted.) Histocol (A1) Histocol (A1) Sardy Redox (85) Loamy Mucky Mineral (F1) Red Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) Loamy Gleyod Metrix (F2) Red Streitfed Leyers (A5) (LRR C) Depleted Metrix (F3) Oth Torn Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Redox Derk Surface (F7) Thick Dark Surface (A12) Redox Derresions (F8) Indicators (Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Gleyed Metrix (S4) Serificitive Leyer (if present): Type: Depth (Inches): Hydric 8  Proportion (A3) Water Marks (S1) (Nonthverine) Seturation (A3) Water Marks (S1) (Nonthverine) Seturation (A3) Water Marks (S2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B3) (Nonthverine) Presence of Reduced Iron (C4) Surface Sail Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water Stained Lesves (B9) Depth (Inches): Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy Indicators; If available: Note of Reduced Iron (C4) Surface Water Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches):	1 am
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ydrie Soll indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A1) Sardy Redox (85) 1 cr Histosol (A1) Sardy Redox (85) Loarny Mucky Mineral (F1) Red Stratified Layers (A5) (LRR C) Loarny Mucky Mineral (F1) Hydrogen Sulfide (A4) Loarny Gleyed Metrix (F2) Red Stratified Layers (A5) (LRR C) Loarny Mucky Mineral (F1) Red Stratified Layers (A5) (LRR C) Loarny Mucky Mineral (F1) Red Stratified Layers (A5) (LRR C) Loarny Mucky Mineral (F1) Red Stratified Layers (A7) Red Stratified Layers (A7) Red Stratified Layer (F6) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Red Sardy Mucky Mineral (S1) Red Sardy Redox Dark Surface (F8) Vernal Pools (F9)  Netter (B11)  Red Vernal Pools (F9)  Netter (B11)  Set (Crus (B11)  Set (Crus (B11)  Set (Crus (B11)  Set (Crus (B11)  Aquestic Invertishes (B13)  Wester Mineral (B1)  Vernal Pools (F9)  Vernal Pools (F1)  Nethors (F1)	
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ydric 3oft indicators: (Applicable to all LRRs, unless otherwise noted.) Histocol (A1) Histocol (A1) Sardy Redox (85) Loamy Mucky Mineral (F1) Red Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) Loamy Gleyod Metrix (F2) Red Streitfed Leyers (A5) (LRR C) Depleted Metrix (F3) Oth Torn Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Redox Derk Surface (F7) Thick Dark Surface (A12) Redox Derresions (F8) Indicators (Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Gleyed Metrix (S4) Serificitive Leyer (if present): Type: Depth (Inches): Hydric 8  Proportion (A3) Water Marks (S1) (Nonthverine) Seturation (A3) Water Marks (S1) (Nonthverine) Seturation (A3) Water Marks (S2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B2) (Neartverine) Drift Deposits (B3) (Nonthverine) Presence of Reduced Iron (C4) Surface Sail Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water Stained Lesves (B9) Depth (Inches): Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy Indicators; If available: Note of Reduced Iron (C4) Surface Water Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Westernd Hydrolosy, if available: Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches): Note of Reduced Iron (C4) Set Table Present? Ves No Depth (Inches):	And the state of t
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Histosol (A1) Sardy Redox (85) 1 cr Histo Epipedon (A2) Stripped Matrix (56) 2 cr Black Histic (A3) Loamy Mucky Mineral (F1) Redox Hydrogen Suifide (A4) Loamy Mucky Mineral (F2) Red Stratified Leyers (A5) (LRR C) Depleted Matrix (F3) Oth 1 cm Muck (A9) (LRR D) Redox Oark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depreasions (F8) Indicate Sandy Mucky Mineral (S1) Vernal Pools (F9) wefa satiritive Leyer (iff present): Type: Depth (Inches): Hydric 8 emarks:  TOROLOGY  Mediand Hydrology Indicators: dmary Indicators (minimum of one required: check all that subly) Set Surface Water (A1) Set Crust (B12) High Water Table (A2) Biotic Crust (B12) Seturation (A3) Aquatic inversionates (B13) Water Marks (B1) (Nonriverine) Drift Deposits (B2) (Nonriverine) Drift Deposits (B2) (Nonriverine) Cydized Rhizospheres along Living Roots (C3) Intundation Visible on Aerial Imagery (B7) Thin Nuck Surface (C7) Water-Stained Lesves (B9) Other (Explain in Remarks)  Book Crust (B1) Charter (C6)  Under Present? Yes No Depth (Inches): Surface Water Present? Yes No Depth (Inches): Surface Water Present? Yes No Depth (Inches): Surface Water Present? Yes No Depth (Inches): Surface Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if available:  Wettlenth Hydrology Indicators:	ocation: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2) Black Histic (A3) Learny Mucky Mineral (F1) Rec Hydrogen Sulfide (A4) Lowy Gleyed Matrix (F2) Rec Stratified Leyers (A5) (LRR C) 1 orn Muck (A9) (LRR D) Depleted Matrix (F3) Thick Dark Surface (A11) Thick Dark Surface (A12) Redox Der Record (F6) Thick Dark Surface (A12) Redox Depressions (F8) Indicate Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Vernal Pools (F9) Welland Hydrology Indicators: (record (F7) Find (Inches): Depth (Inches): Series Water (A1) High Water Table (A2) Seturation (A3) Aquatic Inversionates (B13) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Neartverine) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B8) Inundation Visible on Aerial Imagery (B7) Water-Stained Lesves (B9) Indicate (B1) Depth (Inches): Vernal Pools (F9)	rs for Problematic Hydric Soit <sup>3</sup> :
Histic Epipedon (A2) Black Histic (A3) Learny Mucky Mineral (F1) Rec Hydrogen Sulfide (A4) Lowy Gleyed Matrix (F2) Rec Stratified Leyers (A5) (LRR C) 1 orn Muck (A9) (LRR D) Depleted Matrix (F3) Thick Dark Surface (A11) Thick Dark Surface (A12) Redox Der Record (F6) Thick Dark Surface (A12) Redox Depressions (F8) Indicate Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Vernal Pools (F9) Welland Hydrology Indicators: (record (F7) Find (Inches): Depth (Inches): Series Water (A1) High Water Table (A2) Seturation (A3) Aquatic Inversionates (B13) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Neartverine) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B8) Inundation Visible on Aerial Imagery (B7) Water-Stained Lesves (B9) Indicate (B1) Depth (Inches): Vernal Pools (F9)	n Muck (A9) (LRR C)
Black Histic (A3) Loamy Mucky Mineral (F1) Rec Hydrogen Sulfide (A4) Loamy Gleyad Metrix (F2) Rec Stratified Leyers (A5) (LRR C) Depleted Matrix (F3) Oth Redox Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Redox Derressions (F8) Indicate wells surface (A12) Redox Derressions (F8) Indicate wells surface (A12) Redox Derressions (F8) Indicate (F8) Indicate (A12) Redox Derressions (F8) Indicate (A12) Redox Derressions (A12) Redox D	Muck (A10) (LRR B)
Stratified Leyers (A5) (LRR C)  1 orn Muck (A9) (LRR D)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A12)  Sandy Mucky Minrari (S1)  Sandy Mucky Minrari (S1)  Sandy Mucky Minrari (S1)  Sandy Micky Minrari (S1)  Sandy Gleyed Metrix (S4)  satrictive Leyer (if present):  Type:  Depth (inches):  Depth (inches):  Seriary Indicators:  (many Indicators: (minimum of one required: check all that apply)  Seriary Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum)  Indicators (F3)  Indicat	uced Vertic (F18)
Stratified Leyers (A5) (LRR C)  1 orn Muck (A9) (LRR D)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A12)  Sandy Mucky Minrari (S1)  Sandy Mucky Minrari (S1)  Sandy Mucky Minrari (S1)  Sandy Micky Minrari (S1)  Sandy Gleyed Metrix (S4)  satrictive Leyer (if present):  Type:  Depth (inches):  Depth (inches):  Seriary Indicators:  (many Indicators: (minimum of one required: check all that apply)  Seriary Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum of me required: check all that apply)  Seriary Indicators:  (many Indicators: (minimum)  Indicators (F3)  Indicat	Perent Meterial (TF2)
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) Indicate well as surface (A12) Redox Depressions (F8) Well as surface (A12) Redox Depressions (F8) Indicate well as surface (A12) Redox Depressions (F8) Well as surface (F7) Redox (F7) Redox (F7) Redox (F7) Redox (F7) Redox (F7) Redox (F8)	er (Explain in Remarks)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Redox Depressions (F8) Indicate Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Gleyed Metrix (S4) Sandy Gleyed Metrix (S4) Sandy Gleyed Metrix (S4) Southers (S5) Southers (S6) Southers (	,,
Thick Dark Surface (A12) Redox Depressions (F8) Indicate wetar Sandy Mucky Mineral (S1) Vernal Pools (F9) Wetar Pools (F9) Redox Overnal Pools (F9) Redox (F9) Redox Overnal Pools (F9) Redox (F9) R	
Sandy Mucky Mineral (S1)	rs of hydrophytic vegetation and
Sendy Gleyed Metrix (S4)  setrictive Leyer (if present): Type: Depth (Inches): Hydric 8  emerks:    Proposition   Proposition   Proposition	id hydrology must be present.
Appendix Comments (A1)  FOROLOGY    Petiand Hydrology Indicators:	disturbed or problematic.
Type:	
Depth (Inchee): Hydric & emerks:    PROLOGY	
POROLOGY  **Pelland Hydrology Indicators:  **Inmary indicators: (Ininimum of one required: check all that apply)  **Surface Water (A1)  **Surface Water (A1)  **Surface Water (A2)  **Seturation (A3)  **Surface Set (B3)  **Inimitation Visible on Aerial Imagery (B7)  **Inimitation Visible on Aerial Imagery (B7)  **Water-Stained Lesves (B9)  **Inimitation Visible on Aerial Imagery (B7)  **Inim	
FOROLOGY  felland Hydrology Indicators:  Interary Indicators (Intinuum of one required: check all that sooly)  Surface Water (A1)  High Weter Table (A2)  Seturation (A3)  Water Marks (B1) (Nontiverine)  Sediment Deposits (B2) (Nontiverine)  Drift Deposits (B2) (Nontiverine)  Drift Deposits (B3) (Nontiverine)  Surface Soil Crack (B6)  Intundation Visible on Aerial Integery (B7)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Individual Control of the Control o	oil Present? Yes No
Selected Hydrology Indicators:   Indicators (minimum of one required: check all that sooly)   Selected Select	
rimary indicators (minimum of one required: check all that apoly)  Surface Water (A1)  High Water Table (A2)  Selt Cruek (B11)  High Water Table (A2)  Selt Cruek (B12)  Seturation (A3)  Water Marks (B1) (Nonriverine)  Drift Deposits (B2) (Nonriverine)  Drift Deposits (B3) (Nonriverine)  Drift Deposits (B3) (Nonriverine)  Drift Deposits (B3) (Nonriverine)  Drift Deposits (B3) (Nonriverine)  Presence of Reduced Iron (C4)  Surface Sol Cracks (B6)  Inundation Visible on Aerial Imagery (B7)  Water-Steined Leaves (B9)  Other (Explain in Remarks)  leid Observations:  Vater Table Present?  Vater Table Vater Present?  Vater Table Present?  Vater Table Vater Present?  Vater Table Present?  Vater Table Vater Present?  Vater Vater Vater Present?  Vater Vater Vater Present Vater Vater Present Vater Present Vater Present Vater Present Vater	
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Seturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Inundation Visible on Aerial Integery (B7) Water-Stained Leaves (B9) Thin Nuck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks)  and Observatione: Under Table Present? Ves No Depth (Inches): Surface Water Present? Ves No Depth (Inches): Westend Hydrolotuse Collegy Inches) Surface Collegy Inches)  Surface Water Present? Ves No Depth (Inches): Westend Hydrolotuse Collegy Inches) Surface Water Present? Ves No Depth (Inches): Surface Water Present Pre	
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Seturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Inundation Visible on Aerial Integery (B7) Water-Stained Leaves (B9) Thin Nuck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks)  and Observatione: Under Table Present? Ves No Depth (Inches): Surface Water Present? Ves No Depth (Inches): Westend Hydrolotuse Collegy Inches) Surface Collegy Inches)  Surface Water Present? Ves No Depth (Inches): Westend Hydrolotuse Collegy Inches) Surface Water Present? Ves No Depth (Inches): Surface Water Present Pre	ondary indicators (2 or more required
High Water Table (A2) Seturation (A3) Water Marks (B1) (Nonriverine) Water Marks (B2) (Nonriverine) Drift Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water Table Present? Value Water-Stained Leaves (B9) Glad Observations: Urface Water Present? Value	Water Marks (B1) (Riverine)
Seturation (A3) Aquetic Invertatorates (B13) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Noartiverine) Oxidized Rhizospheres along Living Roots (C3) Drift Deposits (B3) (Monriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in Titled Soils (C6) Inundation Visible on Aerial Insegery (B7) Thin Nuck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks) Ield Observations: Urface Water Present? Yes No Depth (Inches): Surface Water Present? Yes No Depth (Inches): Westend Hydroledes capillary fiting) Secribs Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if evallable:	Sediment Deposits (B2) (Riverha)
Weter Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidized Ritizospheres elong Living Roots (C3) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Imundation Visible on Aerial Integery (B7) Thin Nuck Surface (C7) Water-Steined Lesves (B9) Other (Explain in Remarks) eld Observations: Urface Water Present? Yes No Depth (Inches): Ster Table Present? Yes No Depth (Inches): Westend Hydrole Couldery hinge) escribe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if evallable:	
Sediment Deposits (B2) (Noantverine)  Drift Deposits (B3) (Noantverine)  Drift Deposits (B3) (Noantverine)  Surface Soil Cracks (B6)  Inundation Visible on Aerial Integery (B7)  Water-Stained Lesves (B9)  and Observatione:  State Table Present?  Yes  No  Depth (Inches):  Surface Water Present?  Yes  No  Depth (Inches):  Surface Water Present?  Yes  No  Depth (Inches):  Westend Hydrolockes collegy fringe)  secribe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if svaliable:	Drift Deposits (B3) (Riverine)
Drift Deposits (B3) (Nonriverine)	Drainage Patterns (B10)
Surface Soil Cracks (B8) Recent Iron Reduction in Tilled Soils (C8) Inundation Visible on Aeriel Integery (B7) Thin Muck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks) eld Observations:  Ufface Water Present? Yes No Depth (Inches):  Utack Visiter	Dry-Season Water Table (C2)
Imundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks) ====================================	Crayfish Burrews (C8)
Water-Stained Leaves (99)  Other (Explain in Remarks)  Ield Observations:  United Water Present? Yes No Depth (Inches):  United Water Present? Yes No Depth (Inches):  Stater Teble Present? Yes No Depth (Inches):  Westernd Hydrolington Coulder William (United States)  Westernd Hydrolington Coulder Water (United States)  Westernd Hydrolington Coulder (Un	Saturation Visible on Aerial Imagery (
letd Observations:  urface Water Present? Yes No Depth (Inches):  (ster Table Present? Yes No Depth (Inches):  sturation Present? Yes No Depth (Inches):  Westland Hydrologudes conflient plants:  westland Hydrologudes conflient plants:  eachbe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if evallable:	Shallow Aquitard (D3)
letd Observations:  urface Water Present? Yes No Depth (Inches):  (ster Table Present? Yes No Depth (Inches):  sturation Present? Yes No Depth (Inches):  Westland Hydrologudes conflient plants:  westland Hydrologudes conflient plants:  eachbe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if evallable:	FAC-Neutral Test (D5)
urface Water Present? Yes No Gepth (Inches):	
/ster Table Present? Yes No Deptr (finches):	
aturation Present? Yes No Depth (Inches): Westend Hydrolindudes capitary things)  Westend Hydrolindus Capitary things (Inches): Westend Hydrolindu	
nctudes capifary fringe) rescribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if svaliable:	
lescribe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if available:	
	gy Present? Yes No
lemarks:	gy Present? Yes No
lomarks:	gy Present? Yes No
	gy Present? Yes No
	gy Present? Yes No
	gy Present? Yes No

WETLAND DETERMINATION DATA FORM - Arid West Region Starkerich Project/Site: Applicant/Owner: Ed Sewall Investigator(s): \_\_\_ Section, Township, Range: \_ Landform (hälstope, terrace, etc.): Local relief (concave, convex, none); \_\_\_\_\_ Subregion (LRR): \_\_ Soil Map Unit Name: .... NW! classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_ No \_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_ or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? is the Sampled Area Hydric Soil Present? Yes\_ within a Wetland? Watiend Hydrology Present? Remerks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species That Are OSL, FACW, or FAC: Species Across All Strate: Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_\_ (A/B) Sepling/Shrub Stratum (Plot size: Prevalence Index worksheet: Total % Cover of: Multiply by: FAC species \_\_\_x3= FACU species = Total Cover \_\_\_ x4= UPL species x5= FA Column Totals: \_\_\_\_\_ (A) \_\_\_\_ Prevalence index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is ≤3.01 Morphological Adaptations<sup>1</sup> (Provide supporting date in Remarks or on a separate sheet) \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) = Total Cover Woody Vine Stratum (Plot size: <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation \_\_ = Total Cover % Bare Ground in Herb Stratum \_\_\_ % Cover of Biotic Crust Present? Yes \_\_ \_\_ No\_ Remarks:

Depth	Metrix	Redox Features	
inches)	Color (moist) %	Color (moist) % Type i.	oc <sup>3</sup> Texture Remarks
16_	104312		_ cotty b
		And the second s	
lime: CaC	manufaction Deficient Direction	Reduced Matrix, CS=Covered or Costed Se	and Grains. *Location: PL=Pore Uning, M=Metrix.
	Indicators: (Applicable to all LI		Indicators for Problematic Hydric Sols <sup>3</sup> :
Histosol		Sandy Redox (85)	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)	Loamy Gleyed Matrix (F2)	Rod Perent Material (TF2)
Stratifier	d Layers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
	ick (A9) (LRR D)	Redox Dark Surface (F6)	_
	d Below Dark Surface (A11)	Depleted Dark Surface (F7)	
	ark Surface (A12)	Redox Depressions (F8)	indicators of hydrophytic vegetation and
	lucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
Sendy (	Reyed Metrix (S4)		unless disturbed or problematic.
lestrictive i	Layer (if present):		
testrictive i Type:			
lestrictive i			Hydric Soli Present? Yes No
Restrictive i Type: Depth (In: Remarks:	ches):		Hydric Soli Present? Yes No
Type: Depth (In: Temarks:	ches):		Hydric Soli Present? Yes No
Restrictive i Type: Depth (Inc Remarks:  YDROLO Vetland Hyr	ches):	check all that spoky)	Hydric Soli Present? Yes No  Secondary Indicators (2 or more resired
Type:	GY drology Indicators:	check all that spoly)  Selt Crust (811)	
Restrictive i Type: Depth (in: Remarks:  YDROLO Vettend Hyr Primary IndiaSurface	GY drology Indicators:		Secondary Indicators (2 or more regired
Type:	GY drology Indicators: astors (minimum of one required: Water (A1) ter Table (A2)	Selt Crust (B11)	Secondary Indicators (2 or more resired Water Marks (B1) (Riverine)
Type:	GY  drology Indicators: attorn (minimum of one required; Water (A1) ter Table (A2) on (A3)	Selt Crust (B11) Biotic Crust (B12)	Secondary Indicators (2 or more resired  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)
Type:	GY  drology Indicators: astors (minimum of one required: Water (A1) ker Table (A2) on (A3) erks (B1) (Nontiverine)	Seit Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Suffide Odor (C1)	Secondary Indicators (2 or more resired  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drahage Patterns (B10)
Type:	GY  drology indicators: attors (minimum of one required: Water (A1) ter Table (A2) on (A3) sriks (B1) (Nonriverine) it Deposits (B2) (Nonriverine)	Selt Crust (B11) Blotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Suillde Odor (C1) Oxidized Phizospheres along Livin	Secondary Indicators (2 or more resired  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drahage Patterns (B10)  1g Roots (C3)  Dry-Sasson Water Table (C2)
Type:	GY drology Indicators: attors (minimum of one required; Water (A1) ter Table (A2) on (A3) or (A3) tt Deposits (B2) (Nonriverine) costs (B3) (Nonriverine)	Seit Crust (B11) Biotic Crust (B12) Aquetic Inverterates (B13) Hydrogen Steller Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4)	Secondary Indicators (2 or more resired
Type:	GY  drology Indicators: attors (minimum of one required: Water (A1) ker Table (A2) or (A3) arks (B1) (Nonriverine) onis (B3) (Nonriverine) Soil Cracks (B8)	Seit Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Solifide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced fron (C4) Recent Iron Reduction in Tilled Sol	Secondary Indicators (2 or more resired  — Water Marks (B1) (Riverine) — Sediment Deposits (B2) (Riverine) — Drift Deposits (B3) (Riverine) — Drahage Patterns (B10)  Ing Roots (C3) — Dry-Season Water Table (C2) — Crayfish Burrows (C8)  ilis (C6) — Saturation Visible on Aerial Imagery
Type:	GY  drology Indicators: attors (minimum of one required: water (A1) ker Table (A2) on (A3) lerks (B1) (Nontiverine) or Deposits (B2) (Nontiverine) sooits (B3) (Nontiverine) sooits (B6) on Visible on Acrist Inagery (B7)	Selt Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Suffide Odor (C1) Oxidized Rhizzepheres along Livin Presence of Reducad Iron (C4) Recent fron Reduction in Tilled Soi Thin Myck Surface (C7)	Secondary Indicators (2 or more resired  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drahage Patterns (B10)  Ig Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Its (C6)  Saturation Visible on Aerial Imagery (B10)  Shellow Aquitand (D3)
Type:	GY  frology indicators: attors (minimum of one required; water (A1) ter Table (A2) on (A3) srks (B1) (Nonriverine) osits (B3) (Nonriverine) osits (B4)	Seit Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Solifide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced fron (C4) Recent Iron Reduction in Tilled Sol	Secondary Indicators (2 or more resired  — Water Marks (B1) (Riverine) — Sediment Deposits (B2) (Riverine) — Drift Deposits (B3) (Riverine) — Drahage Patterns (B10)  Ing Roots (C3) — Dry-Season Water Table (C2) — Crayfish Burrows (C8)  ilis (C6) — Saturation Visible on Aerial Imagery
Type:	GY  frology Indicators: attors (minimum of one required: water (A1) ter Table (A2) on (A3) artis (B1) (Nonriverine) oratis (B2) (Nonriverine) soit (B3) (Nonriverine) soit Cracks (B8) on Visible on Aerial Integery (B7) tabled Lesves (B9)	Selt Crust (B11) Biotic Crust (B12) Aquatic invertebrates (B13) Hydrogen Suiffide Odor (C1) Oxidized Rinkospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sol Thin Nick Surface (C7) Other	Secondary Indicators (2 or more resired  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drahage Patterns (B10)  Ig Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Its (C6)  Saturation Visible on Aerial Imagery (B10)  Shellow Aquitand (D3)
Type:	GY  drology Indicators: attors (minimum of one resulted: water (A1) ker Table (A2) or (A3) arts (B1) (Nonriverine) onits (B2) (Nonriverine) Soil Cracks (B8) on Visible on Aerial Imagery (B7) kathed Lesves (B9) wations:	Selt Crust (B11) Biotic Crust (B12) Aquetic invertebrates (B13) Hydrogen Suiffle Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sol Thin Muck Surface (C7) Other Explain in Remarks)	Secondary Indicators (2 or more resired  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drahage Patterns (B10)  Ig Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Its (C6)  Saturation Visible on Aerial Imagery (B10)  Shellow Aquitand (D3)
Type:	GY  drology Indicators: attors (minimum of one required: Water (A1) ker Table (A2) on (A3) arks (B1) (Nonriverine) osits (B3) (Nonriverine) osits (B3) (Nonriverine) Soil Cracks (B8) on Visible on Aerial Imagery (B7) tabled Leaves (B9) restions: er Present? Yes No	Selt Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Suifide Odor (C1) Oxidized Rhizzephrera slong Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Myck Surface (C7) Other Explain in Remarks)	Secondary Indicators (2 or more resired
Type: Depth (In: Remarks:  YDROLO Westend Hy himary Indk Surface High We Seturati Water M Sedimer Drift Dep Inundati Water-S' Field Observator Everter Water Verter Water Verter Carbet Esturation Pr	GY  drology Indicators: attors (minimum of one required: Water (A1) ker Table (A2) on (A3) arks (B1) (Nonriverine) osits (B3) (Nonriverine) osits (B3) (Nonriverine) Soil Cracks (B8) on Visible on Aerial Imagery (B7) tabled Leaves (B9) restions: er Present? Yes No	Selt Crust (B11) Biotic Crust (B12) Aquetic invertebrates (B13) Hydrogen Suiffle Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sol Thin Muck Surface (C7) Other Explain in Remarks)	Secondary Indicators (2 or more resired  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drahage Patterns (B10)  Ig Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Its (C6)  Saturation Visible on Aerial Imagery (B10)  Shellow Aquitand (D3)
Type:	GY  drology Indicators: attors (minimum of one required: water (A1) text Table (A2) on (A3) arks (B1) (Nonriverine) soils (B3) (Nonriverine) soil Cracks (B8) on Visible on Aerial Imagery (B7) taked Lesves (B9) vations: or Present? Yes No Present? Yes No Resent? Yes No	Selt Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Suifide Odor (C1) Oxidized Rhizzephrera slong Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Myck Surface (C7) Other Explain in Remarks)	Secondary Indicators (2 or more neutred
Type:	GY  drology Indicators: attors (minimum of one required: water (A1) text Table (A2) on (A3) arks (B1) (Nonriverine) soils (B3) (Nonriverine) soil Cracks (B8) on Visible on Aerial Imagery (B7) taked Lesves (B9) vations: or Present? Yes No Present? Yes No Resent? Yes No	Selt Crust (B11) Biotic Crust (B12) Aquatic invertebrates (B13) Hydrogen Suiffide Odor (C1) Oxidized Rinizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sol Thin Nyck Surface (C7) Other	Secondary Indicators (2 or more neutred
Type: Depth (In Remarks:  YDROLO  Yestend Hy Trimary Indk Surface High We Seturabl Seturabl Water-Si Field Observ Vester Table Isturation Princludes cap	GY  drology Indicators: attors (minimum of one required: water (A1) text Table (A2) on (A3) arks (B1) (Nonriverine) soils (B3) (Nonriverine) soil Cracks (B8) on Visible on Aerial Imagery (B7) taked Lesves (B9) vations: or Present? Yes No Present? Yes No Resent? Yes No	Selt Crust (B11) Biotic Crust (B12) Aquatic invertebrates (B13) Hydrogen Suiffide Odor (C1) Oxidized Rinizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sol Thin Nyck Surface (C7) Other	Secondary Indicators (2 or more neutred

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM -- Arid West Region Stankurich Project/Site: State: LAS Sampling Point: DP#C Applicant/Owner: Ed Sewall investigator(s): Section, Township, Range: \_ Landform (hillstope, terrace, etc.): Local relief (concave, convex, none): Slope (%): \_\_\_\_ Subregion (LRR): \_\_ \_\_\_\_ Long: \_\_ Datum: Soil Map Unit Name: \_\_\_ \_\_ NWI classification: \_ Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? No\_ Is the Sampled Area Hydric Soil Present? Yes \_\_\_\_ No\_ within a Wetland? Wetland Hydrology Present? Remarks: VEGETATION -- Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species That Are OSL, FACW, or FAC: **Total Number of Dominant** Species Agross Ali Strata: Percent of Dominant Species = Total Cover That Are OBL. FACW, or FAC: Santing/Shrub Stratum (Plot size: \_\_\_ Prevalence Index worksheet: Total % Cover of: Multiply by: = Total Cover UPL species \_\_\_ FAC festien anduny Column Totals: \_\_ Prefeience Index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Indax is ≤3.01 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) \_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) \_\_ = Total Cover Woody Vine Stratum (Plot size: <sup>1</sup>Indicators of hydric soil and wedland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? \_ = Total Cover % Bare Ground in Herb Stratum\_ ... % Cover of Binds Crust Yes. .... No. Remarks:

SOIL			Sampling Point:
Profile Des	cription: (Describe to the dep	n needed to document the indicator or	confirm the absence of indicators.)
Depth	Matrix	Redox Features	
(inches)	Color (moist) %	Calor (maist) % Type <sup>1</sup>	Loc <sup>2</sup> Texture Remarks
10	104 312		Co bly In
Type: C+C	encentration, D=Depletion, RM=	Reduced Metrix, CS=Covered or Costed 8	land Grains. *Location: PL=Pore Lining, M=Mitrix.
		.RRs, unless otherwise noted.)	Indicators for Problematic Hydric Solis <sup>1</sup> :
Histosol	(A1)	Sendy Redox (85)	1 cm Muck (A9) (LRR C)
Histic E	pipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
	latic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
	en Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Perent Material (TF2)
	d Layers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
	uck (A9) (LRR D) d Below Dark Surface (A11)	Redox Dark Surface (F6) Depleted Dark Surface (F7)	
	ark Surface (A12)	Redox Depressions (F8)	Indicators of hydrophytic vegetation and
	lucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present.
Sendy G	Reyed Matrix (S4)		unless disturbed or problematic.
Restrictive	Leyer (if present):		
Type:			
Depth (In	ches):		Hydric Soli Present? Yes No
HYDROLO	GY		
Wetland Hy	drology indicators:		
Primary India	cetors (minimum of one required	check all that apply)	Secondary Indicators (2 or more regired)
Surface	Weter (A1)	Selt Crust (B11)	Water Marks (B1) (Riverine)
High Wa	iter Table (A2)	Biotic Cruet (B12)	Sediment Deposits (B2) (Riverhe)
Saturation	• •	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
	larka (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
	nt Deposits (B2) (Nosriverine)		ng Roots (C3) Dry-Season Water Table (C2)
'	posits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
_	Soil Cracks (86)	Recent from Reduction in Tilled S	• • • • • • • • • • • • • • • • • • • •
	on Visible on Aerial Imagery (B7 tained Leaves (B9)	Thin Muck Surface (C7) Other (Explain in Remarks)	Shallow Aquitand (D3) FAC-Neutral Test (D5)
Field Obser		Onley (Explain in rearraina)	FAC-Neural (est (US)
Surface Wat		io / Septh (Inches):	
Water Table		Dept (mohes):	
Saturation P		Depth (Inches):	Wetland Hydrology Present? Yes No
(includes car		C	Woman Tydrology (1996) 1 1 1 1 10 10 10 10 10 10 10 10 10 10 1
Describe Re	corded Data (stream gauge, mor	nitoring well, aerial photos, previous inspec	tions), if available:
Remarks:			

WETLAND DETERMINATION DATA FORM - Arid West Region Starkurch Project/Site: State: (M) Sampling Point: Applicant/Owner: Ed Sewall investigator(s): Section, Township, Range: \_\_ Landform (hillstope, terrace, etc.): Local relief (concave, convex, none): Subregion (LRR): \_\_\_ \_\_\_\_\_ Long: \_\_\_ Datum: \_\_ Soil Map Unit Name: \_\_\_ Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_ No \_\_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_ Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? is the Sampled Area Hydric Soil Present? Yes \_\_ within a Wetland? Wetland Hydrology Present? Yes \_\_ Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator **Dominance Test worksheet:** Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species That Are OSL, FACW, or FAC: **Total Number of Dominant** Species Across All Strata: Percent of Dominant Species ILCS (A/B) ≈ Total Cover That Are OBL, FACW, or FAC: Santing/Shrub Stratum (Plot size: Prevalence Index worksheet: Total % Cover of: Multiply by: FACU species \_\_\_\_\_ = Total Cover UPL species \_\_\_ 40 FAC Fastven and Column Totals: \_\_ Prevalence Index = B/A = Hydroshytic Vegetation Indicators: Deminance Test is >50% Prevalence Index is ≤3.01 Morphological Adsptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation<sup>†</sup> (Explain) \_\_\_ = Total Cover Woody Vine Stratum (Plot size: <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? \_ = Total Cover % Bare Ground in Herb Stratum\_ % Cover of Biotic Crust Yes Remarks:

#L			8	Sampling Point
file Description: (Describe to t	he depth needed to document the indicator o	r confirm the al	sence of Indicat	ore.)
pth <u>Metrix</u>	Redox Features			
hes) Color (maist)	% Color (moist) % Type	Loc <sup>2</sup> Tex	ture	Remarks
6 10/2 2/2		very cub	by lun	
		<del></del>		
				<del></del>
e: CaConcentration Dalbanistic	on, RM=Reduced Matrix, CS=Covered or Coated	Sand Graine	4 ocation: Di	Pore Lining, M=Matrix.
	to all LRRs, unless otherwise noted.)			matic Hydric Solls*:
fistosol (A1)	Sendy Redox (85)		1 cm Muck (A9) (	_
fietic Epipedon (A2)	Stripped Matrix (S6)		2 cm Muck (A10)	
Black Histic (A3)	Loamy Mucky Mineral (F1)		Reduced Vertic (	F18)
Hydrogen Sulfide (A4)	Loamy Gloyed Metrix (F2)		Red Parent Mate	• •
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)		Other (Explain in	Remarks)
om Muck (A9) (LRR D)	Redox Dark Surface (F6)			
Depleted Below Dark Surface (A				
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Redox Depressions (F8) Vernal Pools (F9)			ytic vegetation and
Sendy Gleved Metrix (S4)	vernal room (ra)		reland hydrology ( nless disturbed or	
rictive Layer (If present):		<u>_</u>	HESE DISKIPES IN	bi omananc
vpe:		- 1		
epth (inches):	And the second s	Hude	ic Soil Present?	Yes 15 -
7				
ROLOGY				
and Hydrology Indicators:				
ary Indicators (minimum of one r	equired; check all that apply)		Secondary Indica	tors (2 or more required)
Surface Water (A1)	Selt Crust (B11)		Water Marks	(B1) (Riverine)
ligh Water Table (A2)	Biotic Crust (B12)		Sediment De	eposits (B2) (Riverhe)
Saturation (A3)	Aquetic invertebretes (B13)		Drift Deposit	s (B3) (Riverine)
Veter Marks (B1) (Nonriverine)			Drainage Pa	
Sediment Deposits (B2) (Nouriv	·	ving Roots (C3)		Water Table (C2)
Onft Deposits (B3) (Nonrivenine			Crayfish Bur	• •
Surface Soil Cracks (B6)	Recent from Reduction in Tilled	Soils (C6)		isible on Aerial Imagery (C
nundation Visible on Aerial Imag			Shallow Aqu	,
Vater-Statned Leaves (B9)	Other (Explain in Remarks)		FAC-Neutral	Test (D5)
Observations:	3 4 2 4 5 4 5			
ce Water Present? Yes _	NoDepth (Inches):	-		
r Table Present? Yes _		-		_
ration Present? Yes_ ides capitary fringe)	gs, monitoring well, aerial photos, previous inspi	`	irology Present?	Yes No
uma izantenan mata tangasii Adin	Ret treatment in ment mane bricker branding high		Mig.	
arks:				
THE CLUB				

WETLAND DETERMINATION DATA FORM -- Arid West Region State: (LV) Sampling Point: Applicant/Owner: Ed Sewall Investigator(s): Section, Township, Range: Landform (hillslope, terrace, etc.): \_\_\_ Local relief (conceve, convex, none): Slope (%): \_\_\_\_\_ Subregion (LRR):\_ \_\_\_ Long: \_\_ Soil Map Unit Name: NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No \_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_ or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Is the Sampled Area Hydric Soil Present? within a Wetland? Watend Hydrology Present? Yes\_ No\_ Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC: **Total Number of Dominant** Species Across All Strata: Percent of Dominant Species \_ = Total Cover That Are OBL, FACW, or FAC: Santing/Shrub Stratum (Plot size: Prevalence index worksheet: Total % Cover of: Multiply by: OBL species FACW species \_\_\_\_ FAC species \_\_\_\_ FACU species \_\_\_\_ Herb Stratum (Plot size: \_\_ UPL species \_\_ ک ہا Feitural Ton Column Totals: \_\_\_ Prevalence Index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevelence Index is ≤3.01 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation\* (Explain) \_\_ = Total Cover Woody Vine Stratum (Plot size: Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation \_\_ = Total Cover % Bare Ground in Herb Stratum\_ % Cover of Biatic Crust \_\_ Yes Remarks:

			The state of the s
Tome Lieucr Depth		in needed to document the indicator or	confirm the absence of mulcators.}
inches)	Metrix Color (moist) %	Redox Features Color (moist) % Type	Loc <sup>2</sup> Texture Remarks
4	104212		your what he
<del></del> .	101000		<del></del>
		Reduced Metrix, CS=Covered or Costed	
-		.RRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
_ Histosol (/	•	Sandy Redox (85)	1 cm Muck (A9) (LRR C)
_ Histic Epi		Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
Black Hist	: Suffide (A4)	Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2)	Reduced Vertic (F18) Red Parent Material (TF2)
	Leyers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
	k (A8) (LRR D)	Redox Dark Surface (F6)	Other (Explain in renies as)
	Balow Dark Surface (A11)	Depleted Dark Surface (F7)	
	k Surface (A12)	Redox Depressions (FB)	Indicators of hydrophytic vegetation and
	icky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
	syed Matrix (S4)	' ' '	unless disturbed or problematic.
_ Sandy Gle	nes (If personal).		<del></del>
	ryar (n krasanci).		
estrictive La	ryar (n prasone).		
Type: Depth (Inch			Hydric Sqli Present? Yes No
Type: Depth (Inch			Hydric Sail Present? Yes No
Type: Depth (Inchemerks:	100);		Hydric Sail Present? Yes No
Type:	100);		Hydric Sail Present? Yes No
estrictive La Type: Depth (Inch emarks:  DROLOG	I <b>Y</b>	check all that appoly)	Hydric Sail Present? Yes No
DROLOG  DROLOG  Type: Depth (Inchemarks:	iee):  Y  rofogy indicators: tors (minimum of one required)	check all thet apply) Selt Cruer (B11)	Secondary indicators (2 or more required)
DROLOG  Bufface W  Surface W	ivy  Yology indicators: tors (minimum of one required:	Selt Crust (B11)	Secondary Indicators (2 or more resulted) Water Marks (B1) (Riverine)
DROLOG  Surface W High Wate	iV  rology Indicators: tors (minimum of one required; later (A1) or Table (A2)	Selt Crust (B11) Biotic Crust (B12)	Secondary indicators (2 pr more required)  — Water Marks (B1) (Rilverine)  — Sediment Deposits (B2) (Rilverine)
Estrictive La Type: Depth (Inchemarks: DROLOG Stiend Hydr Imary Indica Surface W High Wate Seturation	NY rology indicators: tors (minimum of one required: fator (A1) r Table (A2)	Selt Crust (B11) Blotic Crust (B12) Aquatic Invertabrates (B13)	Secondary Indicators (2 or more resulted)  Water Marks (B1) (Riverina)  Sediment Deposits (B2) (Riverina)  Drift Deposits (B3) (Riverina)
DROLOG  Surface W  High Water  Butter	IY  rofogy indicators: tors (minimum of one required; fater (A1)  r (A3) r (A3) rice (B1) (Nonriverine)	Selt Crust (B11) Biotic Crust (B12) Aquestic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Secondary indicators (2 or more realized)  Water Marks (B1) (Riverine) Orift Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Oralizege Patterns (B10)
DROLOG  DROLOG	IY  rology indicators: tors (minimum of one required: fater (A1) ir Table (A2) i (A3) i (A3) Deposits (B2) (Noariverine)	Seit Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv	Secondary Indicators (2 or more realized)  — Water Marks (B1) (Riverine) — Sediment Deposits (B2) (Riverine) — Drift Deposits (B3) (Riverine) — Drainage Patterns (B10) Ing Roots (C3) — Dry-Season Water Table (C2)
DROLOG  DROLOG  DROLOG  Gland Hydr  Imary Indica:  Surface W High Wata Seturation  Weter Ma Seturation  Drift Depo	NY  rology Indicators:  tors (minimum of one required:  fater (A1)  or Table (A2)  (A3)  (A3)  Deposits (B2) (Nonriverine)  Deposits (B2) (Nonriverine)	Seit Crust (B11) Biotic Crust (B12) Aquesic Invertebretes (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizzepheres siong Liv Presence of Reduced Iron (C4)	Secondary indicators (2 or more required)  — Water Marks (B1) (Rilverine) — Sediment Deposits (B2) (Rilverine) — Drift Deposits (B3) (Rilverine) — Drainage Patterns (B10) ing Roots (C3) — Dry-Season Water Table (C2) — Crayfish Burrows (C8)
Type: Depth (Inchemarks:  DROLOG  retland Hydr  rimary, Indicat  Surface W  High Wates  Seturation  Water Mat  Sediment  Drift Depo  Surface S  Surface S	NY  rology indicators: tors (minimum of one required: stater (A1) or Table (A2) (A3) riss (B1) (Nonriverine) Deposits (B2) (Nonriverine) oil Cracks (B6)	Selt Crust (B11) Biotic Crust (B12) Aquesic Invertabrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizzepheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	Secondary Indicators (2 or more resulted)  Water Marks (81) (Riverine)  Sediment Deposits (82) (Riverine)  Drift Deposits (83) (Riverine)  Drainage Patterns (810)  Ing Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)
DROLOG Depth (Inchemerks:  DROLOG Define Hydr Imary Indicas Surface W High Weter Seturation Weter Met Sediment Drift Depo Surface S Innundation	IV  rofogy Indicators: tors (minimum of one required; fater (A1)  rr Table (A2) (A3) rics (B1) (Nonriverine) Deposits (B2) (Noariverine) sits (B3) (Nonriverine) oil Cracks (B6)  t Visible on Aeriel Imagory (B7)	Selt Crust (B11) Biotic Crust (B12) Aquetic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizzenes along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Titled S Thin Muck Surface (C7)	Secondary Indicators (2 or more resulted)  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drainage Patterns (B10)  Ing Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Integery (C8)  Shallow Aquitand (D3)
Type: Depth (Inchemarks:  Depth (Inchemarks:  DROLOG  Settlement Hydrimary Indicate High Wete Seturation Water Mat Sediment Drift Depo Surface Se Inurdation Water Stal	ivy  rology indicators:  tors (minimum of one required;  fater (A1)  ir Table (A2)  ir (A3)  irks (B1) (Nonriverine)  Deposits (B2) (Nonriverine)  etts (B3) (Nonriverine)  oil Cracks (B8)  i Visible on Aeriel Imagery (B7)  ined Lesves (B9)	Selt Crust (B11) Biotic Crust (B12) Aquesic Invertabrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizzepheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	Secondary Indicators (2 or more required)  Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Weter Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Type: Depth (Inchemarks:  DROLOG  Indiand Hydrimary, Indian Surface W High Wate Seturation Water Mat Sedimert Drift Depo Surface Si Inundation Water Sasi	res):  rology indicators: tors (minimum of one required: fater (A1)  r Table (A2)  r (A3)  r (	Selt Crust (B11) Blotic Crust (B12) Aquesic Invertebretes (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizzepheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S ) Thin Muck Surface (C7) Othylir (Explain in Remarks)	Secondary Indicators (2 or more resulted)  Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drainage Patterns (B10) Ing Roots (C3) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitand (D3)
Type: Depth (Inchemarks:  Depth (Inchemarks:  DROLOG  Indiand Hydr  Indian Hydr  Indian Seturation  Water Mat  Sediment  Drift Depo  Surface Se  inundation  Water Sat  Water Sat  indiand  Water Sat  indiand	ivy  rology Indicators:  tors (minimum of one required: fater (A1)  or Table (A2)  (A3)  Deposits (B2) (Nouriverine) Di Cracks (B6)  Visible on Aerial Imagery (B7) ined Lesves (B9) titons:  Present? Yes N	Selt Crust (B11) Blotic Crust (B12) Aquesic Invertebretes (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizzepheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Otheir (Explain in Remarks)	Secondary Indicators (2 or more resulted)  Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drainage Patterns (B10) Ing Roots (C3) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitand (D3)
TOROLOG bettand Hydr dmary Indicat Seturation Wister Mar Sediment	IV  rology indicators: tors (minimum of one required: later (A1) or Table (A2) (A3) rks (B1) (Nonriverire) Deposits (B2) (Noariverine) elits (B3) (Nonriverine) oil Cracks (B6) o Visible on Aeriel Imagery (B7) ined Leeves (B9) titions: Present? Yes N  resent? Yes N	Selt Crust (B11)  Biotic Crust (B12)  Aquesic Invertebretes (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizzespheres siong Liv  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled S  Thin Muck Surface (C7)  Oth	Secondary Indicators (2 or more required)  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9  Shellow Aquitard (D3)  FAC-Neutral Test (D5)
Type: Depth (Inchemarks:  Depth (Inchemarks:  DROLOG  Gettend Hydrimary India Surface W High Wata Saturation Water Nat Drift Depo Surface Su Inundation Inundation Water Table Pristuration Pres	ivitions:    Value   V	Selt Crust (B11)  Biotic Crust (B12)  Aquesic Invertebretes (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizzespheres siong Liv  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled S  Thin Muck Surface (C7)  Oth	Secondary Indicators (2 or more resulted)  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drainage Patterns (B10)  Ing Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Integery (C8)  Shallow Aquitand (D3)
DROLOG  Depth (Inchemarks:  DROLOG  Detth (Inchemarks:  DROLOG  Detth (Inchemarks:  Surface W  High Wate  Seturation  Water Mat  Sediment  Drift Depo  Surface Si  Inundation  Water State  Table Pi  stortides residuates residuates residuates residuates  surface Water	NY  rology indicators: tors (minimum of one required: ster (A1) or Table (A2) (A3) (A3) (A6) Deposite (B2) (Noarriverina) este (B3) indicators (B6) visible on Aerial Imagery (B7) indicators: Present? Yes N arent? Yes N arry fringe)	Selt Crust (B11)  Biotic Crust (B12)  Aquatic Invertabrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizzepheres siong Liv  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled S  Thin Muck Surface (C7)  Oth	Secondary Indicators (2 or more required)  — Water Marks (B1) (Rilverine) — Sediment Deposits (B2) (Rilverine) — Drift Deposits (B3) (Rilverine) — Drainage Patterns (B10) Ing Roots (C3) — Dry-Season Water Table (C2) — Crayfish Burrows (C8) — Saturation Visible on Aerial Integery (C9 — Shellow Aquitand (D3) — FAC-Neutral Test (D5)  Wettend Hydrology Present? Yee No
Type: Depth (Inchemarks:  Depth (Inchemarks:  DROLOG  Settend Hydrimary Indicate High Wete Seturation Water Mat Setdimert Drift Depo Inundation Weter-Stated Givernary rater Table Seturation Water-Stated Seturation Water-Stated Seturation Water-Stated Seturation Water-Stated Seturation Water-Stated Seturation Pre- sturation Pre- sturat	NY  rology indicators: tors (minimum of one required: ster (A1) or Table (A2) (A3) (A3) (A6) Deposite (B2) (Noarriverina) este (B3) indicators (B6) visible on Aerial Imagery (B7) indicators: Present? Yes N arent? Yes N arry fringe)	Selt Crust (B11)  Biotic Crust (B12)  Aquetic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Liv  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled S  Thin Muck Surface (C7)  Oth	Secondary Indicators (2 or more resulted)
Type: Depth (Inch Popth (Inch	NY  rology indicators: tors (minimum of one required: ster (A1) or Table (A2) (A3) (A3) (A6) Deposite (B2) (Noarriverina) este (B3) indicators (B6) visible on Aerial Imagery (B7) indicators: Present? Yes N arent? Yes N arry fringe)	Selt Crust (B11)  Biotic Crust (B12)  Aquetic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Liv  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled S  Thin Muck Surface (C7)  Oth	Secondary Indicators (2 or more resulted)
Type: Depth (Inchemarks:  Depth (Inchemarks:  DROLOG  Settend Hydrimary Indicate High Wete Seturation Water Mat Setdimert Drift Depo Inundation Weter-Stated Givernary rater Table Seturation Water-Stated Seturation Water-Stated Seturation Water-Stated Seturation Water-Stated Seturation Water-Stated Seturation Pre- sturation Pre- sturat	NY  rology indicators: tors (minimum of one required: ster (A1) or Table (A2) (A3) (A3) (A6) Deposite (B2) (Noarriverina) este (B3) indicators (B6) visible on Aerial Imagery (B7) indicators: Present? Yes N arent? Yes N arry fringe)	Selt Crust (B11)  Biotic Crust (B12)  Aquetic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Liv  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled S  Thin Muck Surface (C7)  Oth	Secondary Indicators (2 or more resulted)



WETLAND DETERMINATION DATA FORM -- Arid West Region Starkurich Project/Site: Applicant/Owner: Ed Sewall Investigator(s): Section, Township, Range: Landform (hillslope, terrace, etc.): \_ Local relief (concave, convex, none): \_\_\_\_ Subregion (LRR): \_\_\_ \_\_\_\_\_ Long: \_\_ Datum: \_\_\_ Soil Map Unit Name: .... NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_\_ No \_\_\_\_\_ (If no, explain in Remarks.) Are Vegetation \_\_\_\_\_, Soli \_\_\_\_\_, or Hydrology \_\_\_\_\_ neturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Yes No No Yes No Hydrophytic Vegetation Present? is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC: **Total Number of Dominant** Species Across All Strata: Percent of Dominant Species ■ Total Cover That Are OBL, FACW, or FAC: Septing/Shrub Stratum (Plot size: Prevalence Index worksheet: Total % Cover of: Multiply by: FACW species FAC species x3= FACU species = Total Cover Herb Stratum (Plot size:

1. Corcx 5 pp
2. June 15 UPL species x 5 = FACE. 80 Column Totals: \_\_\_\_\_ (A) 70 FAIN Prevalence Index = B/A = \_\_ Hydrophytic Vegetation Indicators: \_\_\_\_\_Cominence Test is >50% Prevelence index is ≤3.01 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) = Total Cover Woody Vine Stratum (Plot size: <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? \_\_\_ = Total Cover % Bare Ground in Herb Stratum \_\_\_ % Cover of Biotic Crust Yes \_\_ \_\_\_ No\_ Remarks:

ches) Color (mo	iatrix	Redox Features	
		Color (moist) % Type	Loc Texture Remarks
6 104r	12/1	emal	cubby him
		duced Matrix, CS=Covered or Costed	
ine soli indicators: (; Histosol (A1)	Applicable to all LRF	Rs, unless otherwise noted.) Sendy Redox (85)	Indicators for Problematic Hydric Solt <sup>3</sup> : 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 Gloyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5)	(LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A8) (LRR		Redox Derk Surface (F6)	
Depleted Below Dark		Depleted Dark Surface (F7)	•
Thick Dark Surface (A		Redox Depressions (F8)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral		Vernal Pools (F9)	welland hydrology must be present,
Sandy Gleyed Matrix ( strictive Layer (if pres			unless disturbed or problematic.
	enej:		
Type:		•	Hudrig Soil Present? Yes Ma
Depth (inches):			Hydric Soli Present? Yes No
ROLOGY			
Sand Hydrology Indic	store:		
many indicators (minimu		ack all that apply)	Secondary indicators (2 or more resilved)
Surface Water (A1)		Salt Crust (B11)	Water Marks (B1) (Riverine)
High-Water Table (A2)	,	Biotic Crust (B12)	Sediment Deposits (B2) (Riverhe)
Saturation (A3)	,	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (No	nriverine)	Hydrogen Sulfide Odor (C1)	Drainege Patiems (B10)
Sediment Deposits (B)	•	Oxidized Rivizospheres along L	-
Drift Deposits (B3) (No	• •	Presence of Reduced Iron (C4)	
Surface Soil Cracks (B	•	Recent Iron Reduction in Titled	<del>-</del> - · · ·
Inundation Visible on A		Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves		Other (Explain in Remarks)	FAC-Neutral Test (D5)
		Outo (Capania ar residents)	The Theorem Total (CO)
d Observations	Yes No	Depth (Inches):	
	, , , , , , , , , , , , , , , , , , , ,	Depth (Inches):	
id Observations: face Water Present?	Ven / No		
face Water Present? ter Table Present?	Yes No No		Watered Nudraland Bearing Von No.
face Water Present? ter Table Present? uration Present?	Yes No_	Depth (Inches):	Wetland Hydrology Present? Yes No
face Water Present? ter Table Present? uration Present? tudes capillary fringe)	Yes No		
face Water Present? ter Teble Present? uration Present? dudes capillary fringe) scribe Recorded Data (s	Yes No	Depth (Inches):	
face Water Present? ter Table Present? uration Present? tudes capillary fringe)	Yes No	Depth (Inches):	

Lot C

WETLAND	DETERMINATION DATA FORM	- Arid West Region
Project/Site: Starte Ui C	City/County:	17+1+25 Sampling Date: 3-2-2
Applicant/Owner:		State: WA Sampling Point: DP# / C
Investigator(s): Ed Sew	Section, Township, Ra	ange:
Landform (hillslope, terrace, etc.);		convex, none): Slope (%):
		Long: Deturn:
Soil Map Unit Name:		NWI classification:
Are climatic / hydrologic conditions on the site typics	of fee this time of case? Yes	
		•
ve Vegetation Soil or Hydrology _		"Normal Circumstances" present? Yes No
tre Vegetation, Soil, or Hydrology _		eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site	map showing sampling point i	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes U	No	
	No. 1	, ,
Wetland Hydrology Present? Yes		nd? Yes No No
Remarks:	······································	
		ŧ
EGETATION - Use scientific names o	f plants.	
	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stretum (Plot size:)	% Cover Species? Status	1 Annual of Collisions C
		That Are OBL, FACW, or FAC:(A)
		Total Number of Dominant
3.		Species Across Ali Strata: (6)
**	- 7-4-10	Percent of Dominant Species
Santing/Shrub Stratum (Plot size:	= Total Cover	That Are OBL, FACW, or FAC: (A/B)
1		Prevalence Index worksheet:
2		Total % Cover of: Multiply by:
3.		OBL species x 1 =
f		FACW species x 2 =
5,		FAC species x 3 =
ferb Stratum (Plot size:)	= Total Cover	FACU species x4=
Festina and	40 M	UPL species x5=
Andry- Ty	40 FAC	Column Totals: (A) (B)
3.		Prevalence Index = B/A =
k		Hydrophytic Vegetation Indicators:
5.		Dominance Test is >50%
š		Prevalence Index is ≤3.01
7.		Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
)		Problematic Hydrophytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size:	= Total Cover	( (
1.		Indicators of hydric soil and wetland hydrology must
2		be present, unless disturbed or ppoblematic.
	= Total Cover	Hydrophytic
M. Donn Chanterd in Linch Charles		Vegetation
% Bare Ground in Herb Stratum	a Cover or Biotic Crust	Present? Yes No
Remarks:		

Depth Matrix	Redox Features	or confirm the absence of Indicators.)
inches) Color (moist) %	Color (moist) % Type	Loc Texture Remarks
14 10m212		- 1-let 1 -
<u> </u>		
		**************************************
		**************************************
Type: C=Concentration, D=Depletion, RM: lydric Soli Indicators: (Applicable to all		Sand Grains. Location: PL=Pore Lining, M=Matrix.
• • • • • • • • • • • • • • • • • • • •	•	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sendy 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 Suifide (A4)	Loamy Gleyed Matrix (F2)	Red Perent Material (TF2)
Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D)	Depleted Matrix (F3) Redox Derk Surface (F6)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	Standismann of buildenstee the commentation and
Trick Dark Surface (A12) Sandy Mucky Mineral (S1)	Vernal Pools (F9)	3indicators of hydrophytic vegetation and wetland hydrology must be present,
Sandy Gleyed Metrix (S4)	Varial Pools (Fe)	unless disturbed or problematic.
estrictive Layer (if present):		Characteristic or procedure.
onners rate in bresend.		
Tomas		İ
Type:		
Type:		Hydric Soil Present? Yes Ne
Depth (inches):emerks:		Hydric Soil Present? Yes Ne
Depth (inches):emerks:		Hydric Soil Present? Yes Ne
Depth (inches):emarks:  /DROLOGY  retand Hydrology Indicators:		
Depth (inches):		Hydric Soli Present? Yes Ne  Secondary indicators (2 or more resulter
Depth (inches):emarks:  /DROLOGY  retland Hydrology Indicators:  timary indicators (minimum of one requiredSurface Water (A1)	Salt Crust (B11)	Secondary indicators /2 or more resulted
Depth (inches):	Selt Crust (B11) Biotic Crust (B12)	Secondary indicators (2 or more resuire)
Depth (inches):	Salt Crust (B11)	Secondary indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Depth (inches):	Selt Crust (B11) Biotic Crust (B12)	Secondary Indicators /2 or more resuite  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverhe)
Depth (inches):	Sait Crust (B11) Blotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Secondary indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Depth (inches): emerks:  **PROLOGY  **Interval indicators: firmary indicators: firmary indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Weter Marks (B1) (Nonrivertine)	Sait Crust (B11) Blotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Secondary Indicators /2 or more require  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drainage Patterns (B10)  Iving Roots (C3)  Dry-Season Water Table (C2)
Depth (inches):emarks:  /DROLOGY  retland Hydrology Indicators:  timary indicators (minimum of one required  _ Surface Water (A1)  _ High Water Table (A2)  _ Saturation (A3)  _ Water Marks (B1) (Nonriverine)  _ Sediment Deposits (B2) (Nonriverine)	Salt Crust (B11) Blotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li	Secondary Indicators /2 or more require  Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Iving Roots (C3) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Depth (inches):	Salt Crust (B11) Blotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presente of Reduced fron (C4) Recent fron Reduction in Tilled	Secondary Indicators /2 or more require  Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Iving Roots (C3) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Depth (Inches):	Salt Cruet (B11)  Blottc Cruet (B12)  Aquatic Invertebrates (B13)  Hydrogen Suffice Odor (C1)  Oxidized Rhizospheres along Li  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled  Thin Muck Surface (C7)	Secondary Indicators (2 or more require)  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drainage Patterns (B10)  Iving Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Soils (C6)  Seturation Visible on Aerial Imagery
Depth (Inches):	Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oidized Rinkzospheres along Li  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)	Secondary Indicators (2 or more resulted  Water Marks (B1) (Riverina)  Sediment Deposits (B2) (Riverina)  Drift Deposits (B3) (Riverina)  Drainage Patterns (B10)  Ving Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Soils (C6)  Selis (C6)  Selis (C6)  Shallow Aquitand (D3)
Depth (Inches):	Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oidized Rinkzospheres along Li  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)	Secondary Indicators (2 or more resulted  Water Marks (B1) (Riverina)  Sediment Deposits (B2) (Riverina)  Drift Deposits (B3) (Riverina)  Drainage Patterns (B10)  Ving Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Soils (C6)  Selis (C6)  Selis (C6)  Shallow Aquitand (D3)
Depth (Inches):	Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oidized Rinkzospheres along Li  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)	Secondary Indicators (2 or more resulted  Water Marks (B1) (Riverina)  Sediment Deposits (B2) (Riverina)  Drift Deposits (B3) (Riverina)  Drainage Patterns (B10)  Ving Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Soils (C6)  Selis (C6)  Selis (C6)  Shallow Aquitand (D3)
Depth (inches):	Salt Cruet (B11)  Biotic Cruet (B12)  Aquatic Invertebrates (B13)  Hydrogen Suffice Odor (C1)  Oxidized Rhizospheres along Li  Presence of Reducad Iron (C4)  Recent Iron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)	Secondary Indicators (2 or more resulted  Water Marks (B1) (Riverine)  Sediment Deposits (B2) (Riverine)  Drift Deposits (B3) (Riverine)  Drainage Patterns (B10)  Ving Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Soils (C6)  Saturation Visible on Asrial Imagery  Shallow Aquitand (D3)  FAC-Neutral Test (D5)
Depth (inches):	Salt Cruet (B11)  Biotic Cruet (B12)  Aquatic Invertebrates (B13)  Hydrogen Suffice Odor (C1)  Oxidized Rhizospheres along Li  Presence of Reducad Iron (C4)  Recent Iron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)	Secondary Indicators (2 or more resulted  Water Marks (B1) (Riverina)  Sediment Deposits (B2) (Riverina)  Drift Deposits (B3) (Riverina)  Drainage Patterns (B10)  Ving Roots (C3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Soils (C6)  Selis (C6)  Selis (C6)  Shallow Aquitand (D3)
Depth (inches):	Salt Crust (B11)  Biotic Crust (B12)  Aquatic invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Li  Presence of Reduced fron (C4)  Recent fron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)  Depth (inches):	Secondary Indicators /2 or more resulter
Depth (Inches):	Salt Crust (B11)  Biotic Crust (B12)  Aquatic invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Li  Presence of Reduced fron (C4)  Recent fron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)  Depth (inches):	Secondary Indicators /2 or more resulter
Depth (Inches):	Salt Crust (B11)  Biotic Crust (B12)  Aquatic invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Li  Presence of Reduced fron (C4)  Recent fron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)  Depth (inches):	Secondary Indicators /2 or more resulter
Depth (Inches):	Salt Crust (B11)  Biotic Crust (B12)  Aquatic invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Li  Presence of Reduced fron (C4)  Recent fron Reduction in Tilled  Thin Muck Surface (C7)  Other (Explain in Remarks)  Depth (inches):	Secondary Indicators /2 or more resulter

US Army Corps of Engineers

	Δ
Wetland name or number_	

# **RATING SUMMARY – Eastern Washington**

Name of wetland (or ID #): _	Stavanich - Wett	and A	_ Date of site visit: <u>3・2・2</u> と
Rated by Ed Scur	4		es_N6 Date of training
HGM Class Used for Rating_	Depresul Uni	it has multip	le HGM classes?N
	ot complete without the fe	igures requ	ested (figures can be combined).

# OVERALL WETLAND CATEGORY \_\_\_\_

17

# 1. Category of wetland based on FUNCTIONS

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

Category IV - Total score = 9 - 15

FUNCTION	Improving Water Quality		,	Hydrologic		Habitat		it		
		Cir	cle the	2	ap	propri	ate	rat	ings	
Site Potential	Н	M	(1)		Н	М (	D	Н	М	
Landscape Potential	Н		L	₫	H	M	L	Н	M	L
Value	H	М	L	1	Н	M	L	Н	M	L
Score Based on Ratings		4				6			5	

Score for each function based on three ratings (order of ratings ìs not important) 9 = H,H,H8 = H, H, M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L3 = L,L,L

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	II		
None of the above			



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

## **Depressional Wetlands**

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

## Riverine Wetlands

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

## Lake-fringe Wetlands

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

# Slope Wetlands

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

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

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

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

<b>1.</b> [	Does the entire wetland unit <b>meet both</b> 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)
C	The 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 omes 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
<b>3</b> . D	oes the entire wetland unit <b>meet all</b> 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 <b>Riverine</b>
tl	the entire wetland unit in a topographic depression in which water ponds, or is saturated to he surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland.

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

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

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



DEPRESSIONAL WETLANDS		Poi (on	nts ly 1 score
Water Quality Functions - Indicators that the site function D 1.0 Does the wetland unit have the potential to improve water		<b>y∙</b> per	box)
D 1.1 Characteristics of surface water flows out			
Wetland has no surface water outlet -		oints = 5	
Wetland has an intermittently flowing outlet	•	oints = 3	
Wetland has a highly constricted permanently flowing outlet	•	points = 3	
Wetland has a permanently flowing surface outlet	•	points = 1	<b>.</b> 3
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or org			
YES points = 3	AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	15)	<b>~</b>
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and,			
b 1.3 characteristics of persistent vegetation (enlergent, shrub, and,	of forest cowardin class)		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	n	oints = 5	
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of a	·	oints = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 or		points = 1	
Wetland has persistent, ungrazed vegetation <1/10 of area	•	points = 6	Ö
D 1.4 Characteristics of seasonal ponding		points - g	
This is the area of ponding that fluctuates every year. Do not coun		nonded	
This is the area of politing that flactuates every year. Do not coun	it the area that is permanently p	oonded.	
Area seasonally ponded is > 1/2 total area of wetland		points = 3	
Area seasonally ponded is ¼ - ½ total area of wetland		points = D	
Area seasonally ponded is < 1/4 total area of wetland		points = 0	1
Total for D 1	Add the points in the box	·	4
	1= M (0-5=L)		
Rating of Site Potential If score is: $12-16 = H$ 6-1	1 = 100		
		e first nage	
	Record the rating on the		
D 2.0 Does the landscape have the potential to support the water	Record the rating on the		
	Record the rating on the er quality function at the site		
D 2.0 Does the landscape have the potential to support the water D2.1 Does the Wetland unit receive stormwater discharges?  D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses the stormwater discharges?	Record the rating on the er quality function at the site	e?	1
D 2.0 Does the landscape have the potential to support the water D2.1 Does the Wetland unit receive stormwater discharges?	Record the rating on the er quality function at the site Yes = that generate pollutants	D'No = 0	- 0
D 2.0 Does the landscape have the potential to support the water D2.1 Does the Wetland unit receive stormwater discharges?  D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses the stormwater discharges?	Record the rating on the er quality function at the site Yes = that generate pollutants Yes =	PNo = 0 PS = 1 No = 0 1 No = 0	0
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D 2.0 Does the landscape have the potential to support the water D2.1 Does the Wetland unit receive stormwater discharges?  D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses to D2.3 Are there are septic systems within 250 ft of the wetland unit?  D2.4 Are there are other sources of pollutants coming into the wetland D2.1 – D2.3? Source  Total for D 2  Rating of Landscape Potential If score is: 3 or 4 = H  D 3.0 Is the water quality improvement provided by the site value D3.1 Does the unit discharge directly (within 1 mile) to a st D 3.2 Is the unit in a basin or sub-basin where water quality is an issue eutrophic lakes, problems with nuisance and toxic algae)?	Record the rating on the er quality function at the site of the requality function at the site of the requality function at the site of the requality function at the site of the record the record the rating on the ream, river, or lake that is on the ream.	e?  DNo = 0  s = 1 No = 0  1 No = 0  1 No = 0  es above  e first page  e 303dlist?  = 1 No = 0  list,  s = 1 No = 0  ity? (answer	0 2
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D 2.0 Does the landscape have the potential to support the water D2.1 Does the Wetland unit receive stormwater discharges?  D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses to D2.3 Are there are septic systems within 250 ft of the wetland unit?  D2.4 Are there are other sources of pollutants coming into the wetland D2.1 – D2.3? Source  Total for D 2  Rating of Landscape Potential If score is: 3 or 4 = H  D 3.0 Is the water quality improvement provided by the site value D3.1 Does the unit discharge directly (within 1 mile) to a story D 3.2 Is the unit in a basin or sub-basin where water quality is an issue eutrophic lakes, problems with nuisance and toxic algae)?  D 3.3 Has the site been identified in a watershed or local plan as important.	Record the rating on the er quality function at the site of the requality function at the site of the requality function at the site of the requality function at the site of the record the record the rating on the ream, river, or lake that is on the ream.	e?  DNo = 0  s = 1 No = 0  1 No = 0  1 No = 0  es above  e first page  e 303dlist?  1 No = 0  list,  s = 1 No = 0  ity? (answer  s = 2 No = 0	0 0 2

Wetland Rating System for Eastern WA: 2014 Update Rating Form

Record the rating on the first page

DEPRESSIONAL WETLANDS  Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion.	Points (only 1 score per box)
D 4. 0 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	
D 4.1 Characteristics of surface water flows out of the wetland unit:	
Wetland has no surface water outlet points = 8	
Wetland has an intermittently flowing outlet points = 4	
Wetland has a highly constricted permanently flowing outlet points = 4	
Wetland has a permanently flowing surface outlet points = 0 (If outlet is a ditch and not permanently flowing treat unit as "intermittently flowing")	4
D 4.2 Depth of storage during wet periods Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).	
Seasonal ponding: => 3 ft above the lowest point in unit or the surface of permanent ponding points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in unit or the surface of permanent ponding points = 6	
The wetland is a "headwater" wetland" points = 4	
Seasonal ponding: 1 ft - < 2 ft points = 4	
Seasonal ponding: 6 in - < 1 ft points = 2	
Seasonal ponding: <6 in orr unit has only saturated soils points = 0	0
Total for D 4 Add the points in the boxes above	4
Rating of Site Potential If score is: 12 – 16 = H 6 - 11 = M 0 - 5 = L  Record the rating on the first page	
D 5.0 Does the landscape have the potential to support hydrologic functions at the site?	
D5.1 Does the unit receive any stormwater discharges? Yes = 1 No = 0	j
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates runoff? $(es = 1)$ No = 0	J
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with intensive human land uses?  (es = 1) No = 0	/
Total for D 5 Add the points in the boxes above	3
Rating of Landscape Potential If score is: 3 = H 1,2 = M 0 = L  Record the rating on the first page	
D 6.0 Are the hydrologic functions provided by the site valuable to society?	
D 6.1 Is the unit is in a landscape that has flooding problems?  Choose the description that best matches conditions around the wetland unit being rated. Do not add points.  Choose the highest score if more than one condition is met.	
☐ The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g. salmon redds), AND	
<ul> <li>Damage occurs in sub-basin that is immediately downgradient of unit points=2</li> <li>Damage occurs in a sub-basin further down-gradient points = 1</li> </ul>	
☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	
Explain why points = 0	
☐ There are no problems with flooding downstream of the unit. points = 0	}
D 6.2 Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?  Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	)
Rating of Value If score is: 2-4 = H 1 = M 0 = L	I

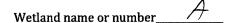
Record the rating on the first page



These questions apply to wetlands of all HABITAT FUNCTIONS - Indicators that site functions to pro-		habitat		(only 1 score per box)
H 1. Does the wetland unit have the potential to provide habita				
H 1.1 Categories of vegetation structure  Check the Cowardin vegetation classes present and categories of emer  category is >= ¼ acre or >= 10% of the unit if unit is < 2.5 acres	gent plants. Size t	threshold	for each	
Emergent plants 0-12 in. (0 – 30 cm) high are the highest lay  Emergent plants >12 – 40 in.(>30 – 100cm) high are the high  Emergent plants > 40 in.(> 100cm) high are the highest layer  Scrub/shrub (areas where shrubs have >30% cover)  Forested (areas where trees have >30% cover)	nest layer with >30 r with >30% cover 4-6 3 ch 2 ch	% cover checks necks necks	points = 3 points = 2 points = 1	
H 1.2. Is one of the vegetation types "aquatic bed?"	1 cl YES = 1 point	heck NO =	points = 0	Q
H 1.3. Surface Water			o points)	0
H 1.3.1 Does the unit have areas of "open" water (without herb acre OR 10% of its area during the March to early June OR in Au Note: answer YES for Lake-fringe YES = 3 points & go to H 1.4 H 1.3.2 Does the unit have an intermittent or permanent, and u boundaries, or along one side, over at least ¼ acre or 10% of its YES = 3 points	gust to the end of wetlands  nvegetate,d strear area, (answer yes	Septemb NO = go t	er? o H 1.3.2 ts 1.3.1 is NO)?	0
H 1.4. Richness of Plant Species  Count the number of plant species in the wetland that cover at least species can be combined to meet the size threshold)  Do not include Eurasean Milfoil, reed canarygrass, purple loc Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tame of species Scoring: > 9 species = 2 points 4-9 species	o not have to name osestrife, Russian C orisk)	e the spec	ries. Igmites,	)
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion between types and unvegetated areas (open water or mudflats) is high, medium, low,  Use map of Cowardin plant classes prepared for questions H1.1	or none.			Figure
None = 0 points	ate = 2 points			
High = 3 points High = 3 points riparia  NOTE: If you have four or more classes or three plants classes and ope	n braided channel n water the rating			)

Wetland name or number	}
------------------------	---

H 1.6. Special Habitat Feature	s·				***************************************
		t in the wetland ur	it. The number of checks	is the score	
l B			4in. diameter) within the a		
ponding or in stream.	<u></u>	, (			
Cattails or bulrushes are	present within the	unit.			
	-		tland unit or within 30 m (	100ft) of the edge.	
Emergent or shrub veget				,	
			ver or muskrat for dennin	g (>45 degree	
slope) OR signs of rece		,		0 (	
	•	h stratum of veget	ation (canopy, sub-canop	v. shrubs.	1
herbaceous, moss/grou		_		ore possible = 6	,
H 1. TOTAL Score -			Add the check marks in th	e box above	ሳ
Rating of Site Potential	If score is:	12 – 16 = H	6 - 11 = M Record the rating	0 - 5 = L on the first page	
H 2.0 . Does the landscape	have the potenti	al to support hak	oitat at the site?		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
H 2.1 Accessible habitat (only	area of habitat ab	utting wetland uni	t). Calculate:		
% undisturbed habitat				%	
If total accessible habit		· · · · · · · · · · · · · · · · · · ·		_	
i	6) of 1km circle (~	100 hectares)		points = 3	
20 - 33% of :				points = 2	
10- 19% of 1				points = 1	
<10% of 1km				points = 0	0
H2.2 Undisturbed habitat in 1		nit If		(points = 0	***************************************
[	habitat > 50% of c			points = 2	
	habitat 10 - 50% a			points = 3	
		-		points = 2	,
1	habitat 10 - 50% a habitat < 10% of c	•		points = 0	J
H2.3 Land use intensity in 1 kg		ii cie		points – o	
1	le is high intensity	land use		points = (, 2)	
	et criterion above	iaria asc		points = (- 2) points = 0	٥
		unual rainfall ic loce	than 12 inches, and its w		
			ructures. <i>(Generally, this n</i>		
boundaries of reclamat				ieuns outside	0
Total for H 2					4
Rating of Landscape Poten	· ····	add the points in 4-6 = H		· 1 1	1
nating of Lanuscape Poten	uai II SCOFE IS:	4- 0 = M		(1=L	
			кесоra tne ratin	g on the first page	
H 3.0 Is the Habitat provide		<u>-</u>		·	
H3.1Does the site provides ha	bitat for species va	alued in laws, regu	lations or policies? (choos	e the highest score)	
Site meets ANY of the following				points = 2	
It provides habitat for	Threatened or End	dangered species (	any plant or animal on sta	te or federal lists)	
It is a "priority area" fo	or an individual W	DFW species			
It is a Wetland With a	High Conservation	Value as determin	ned by the Department of	Natural Resources	
It has 3 or more priori	ty habitats within	100m (see Append	ix B)		
It has been categorize	d as an important	habitat site in a loc	cal or regional comprehen	sive plan, in a	
Shoreline Master Pla			- •		
Site has 1 or 2 priority habitat	s within 100m (s	ee Appendix B)		points = 1	
Site does not meet any of the	·			points = 0	
L	ore is:	2 = H	(1-11)		
nating of value IT SC	U1 E 15.	2 = 11	1 = M	0 = L	
			кесоra the rating	g 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 Check off any criteria that apply to the wetland. Circle the Category when the	Category
appropriate criteria are met.	
SC 1.0 Vernal pools	
Is the wetland unit <b>less than 4000 ft<sup>2</sup></b> , and does it meet at least <b>two</b> of the following criteria?	
<ul> <li>Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input</li> </ul>	
<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 an impermeable layer such as basalt or clay.</li> </ul>	
<ul> <li>Surface water is present for less than 120 days during the "wet" season.</li> <li>YES = Go to SC 1.1</li> <li>NO - not a vernal pool</li> </ul>	
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.	
— 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?	
<ul> <li>Salt encrustations around more than 80% of the edge of the wetland</li> </ul>	
— More than ¾ 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



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/wnhpwetlands.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 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	I
soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the	
soil profile? (See Appendix C for a field key to identify organic soils)?	
Yes - go to SC 4.3 No - go to SC 4.2	
SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less	
than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic	
ash, or that are floating on top of a lake or pond??	
Yes - go to SC 4.3 No - Is not a bog for rating	
SC 4.3. Does an area within the unit have more than 70% cover of mosses at ground level	I
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	1
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:	
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 Category I calcareous fen No - Is not a calcareous fen	Cat. I



SC 5.0 Forested Wetlands		
* * · · · - · - · · · · · · · · ·	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)	a: (Continue only if you have identified a forested class is	
•	10 year" floodalain of a river or stream	
	00 year" floodplain of a river or stream	
<ul> <li>aspen (Populus tremuloides)</li> <li>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 de	The state of the s	
	a forested wetland with special characteristics	
	orest canopy where more than 50% of the tree species (by	
cover) are slow growing native tre	. , , ,	Cat. I
,	•	Cat. I
YES = Category I	NO = go to SC 5.2	
SC 5.2 Does the unit have areas where	e aspen ( <i>Populus tremuloides</i> ) 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 growing	· •	Cat. II
species (by cover) are rust grown	Species (see ruble )	Cat. II
YES = Category II	NO = go to SC 5.5	
SC 5.4 Is the forested component of the stream?	ne wetland within the "100 year floodplain" of a river or	
YES = Category II		Cat. II
Category of wetland based on Spo	ecial Characteristics	
	highest" rating if wetland falls into several categories.	114
		NA
n you are	swered NO for all types enter "Not Applicable" on p.1	

			$\mathcal{L}$
Wetland	name or	number	$\sim$

# **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 )

http://wdfw.wa.gov/publications/00165/wdfw00165.pdf )
Count how many of the following priority habitats are within 330 ft (100m) of the wetland unit? NOTE: This question is independent of the land use between the wetland unit and the priority habitat.
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).
Old-growth/Mature forests: Old-growth east of Cascade crest: Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
<b>Instream:</b> 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.
<b>Talus:</b> 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.

