Tom Duebendorfer - Biological Consultant, Professional Wetland Scientist

June 7, 2024

B. Scott Brown, P.E.
1319 North Division Avenue
Sandpoint, Idaho 83864
Office: (208) 263-4160
Cell: (208) 610-1157
sbrown@jasewell.com

Re: Wetland Assessment Report for property south of Sagle Rd, ID
RP56N02W027950A; T 56N, R 2W portion of Section 2

Dear Scott:

Per your request for environmental services, I am submitting this Wetland Assessment Report for the property referenced above (Figure 1). On June 6, 2024, I visited the site to determine if there are wetlands on the property as the National Wetland Inventory (NWI) mapped an emergent (non-woody, temporarily flooded) wetland on the property. I completed four Data Plots and photo-documented current site conditions. The USGS 7.5' topographic quad is Sagle, ID.

Site Conditions
The property is largely undeveloped pasture with an unused house on the northern end of the property. Most of the property is open, grassy meadow.

Vegetation
The property consists of meadow foxtail (FAC [facultative wetland species]) with numerous non-hydrophytic (FACU) species (smooth brome, tansy, sulfur cinquefoil and vetch [see Data Plot forms]). None of the plots showed hydrophytic vegetation.

Soils
The Natural Resources Conservation Service (NRCS) mapped the property as being underlain by Mission silt loam (hydric) (Figure 1). The soil profiles investigated within the NWI-mapped wetland area did not show hydric indicators.

Hydrology
The NWI mapped a band of PEM1A (emergent, temporarily flooded) wetland through the center and western portion of the property (Figure 2). Hydrology was not observed on the property, except for some surface leakage from a hydrant (Figure 2). No hydrologic indicators were observed or likely in the remaining areas.

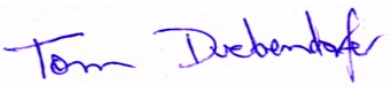
Wetland Determination
I determined, based on the Data Plots, that hydrophytic vegetation was NOT present, soils did NOT show hydric indicators, and wetland hydrology was NOT observed.

The property does not contain wetlands.

Regulatory Issues
The Corps of Engineers (letter dated March 22, 1993) also determined the property was not "subject to Department of Army regulations ..." (letter appended).

Thank you for requesting my services. Let me know if you have any questions or need additional information.

Sincerely,



Tom Duebendorfer, MA, PWS (Emeritus)

attachments:
References
Regulatory Requirements
Figure 1: Vicinity, NWI and NRCS Map
Figure 2: Data Plot and Photograph Locations Map
Photosheet
Corps Letter Stating Site not subject to Federal Regulation
Data Plots (4) 2-page forms
Résumé

References Used (not necessarily cited):

Bonner County Viewer (on-line mapping tool) (https://cloudgisapps.bonnercountyid.gov/public/).

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, Fish and Wildlife Service, U.S. Dept. of the Interior, FWS/OBS-79/31.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.

ESRI. ArcMapPro 2.3 GIS software. Arrow Series 100 GPS unit.

Hitchcock, C.L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1977 (and as updated 2018 in 2nd Edition). Vascular Plants of the Pacific Northwest. University of Washington Press. Seattle, Washington (five volumes).

NAIP 2013. National Agricultural Imagery Program. https://www.fsa.usda.gov/programs-and-services/aerial-photography/imagery-programs/naip-imagery/index.

NRCS 2018. Field Indicators of Hydric Soils in the United States, Version 8.0.

NRCS. US Department of Agriculture, National Resources Conservation Service. Soil Survey (website) (https://websoilsurvey.nrcs.usda.gov/app/).

NTCHS 2012. National Technical Committee for Hydric Soils, Natural Resources Conservation Service. Hydric Soils List Criteria. New NASIS Database Selection Criteria. Federal Register Doc. 2012-4733 Filed 2-28-12

Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region 2010 (Version 2.0)

US Army Corps of Engineers 2018 [Federal Register/Vol. 73, No. 70 / Thursday, April 10, 2008 / Rules and Regulations].

US Army Corps of Engineers. 2018. 33 CFR Part 332 - Compensatory Mitigation for Loss of Aquatic Resources 33 U.S.C. 401 et seq.; 33 U.S.C. 1344; and Pub. L. 108-136.

US Army Corps of Engineers. 2021. Nationwide Permit 29 Residential Developments Effective Date: March 15, 2021 / Expiration Date: March 15, 2026 Authorities: Sections 10 and 404 (https://saw-reg.usace.army.mil/NWP2021/NWP29.pdf).

USDI. National Wetland Inventory mapping (website) (https://www.fws.gov/wetlands/data/Mapper.html).

USGS. 1989. 7.5' topographic quadrangle, Sagle, ID.

Regulatory Permitting Process: Types of Permits - Corps of Engineers

Under the Clean Water Act, the Corps has the authority to regulate the discharge or fill or dredged material into "Waters of the US". There are three Permits the Corps uses to regulate fill into wetlands. The Regional General and Individual Permits (not described here) are probably not appropriate for your site.

(1) Nationwide General (NWP): This permit is authorized for specific activities nationwide with minimal impact and minimal evaluation time. The NWPs typically have a ½ acre limit for fill in wetlands and 300 linear foot limit for fill in stream channels. A Pre-Construction Notification application (PCN) must be submitted to the appropriate field office (Walla Walla District). Typically, *less than 1/10-acre of wetland fill does not require mitigation* (though a PCN is required), and up to ½ acre of wetland fill, requires mitigation. (See below for **compensation methods**.) There are Regional Conditions for Nationwide Permits (https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Permits/2017-Nationwide-Permits/). There are 54 Nationwide Permits each regarding specific activities proposed in wetlands (www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/Nationwide-Permits/).

When any permit application is received, it is evaluated based upon three criteria: avoidance, minimization, and mitigation. Once the applicant meets these criteria, a permit can be issued. Although, technically, the Corps has 45 days with which to respond to permit applications (US Army Corps of Engineers 2021), it is taking Corps presently about 60 days to process permits.

Compensation Methods for unavoidable Wetland Impacts

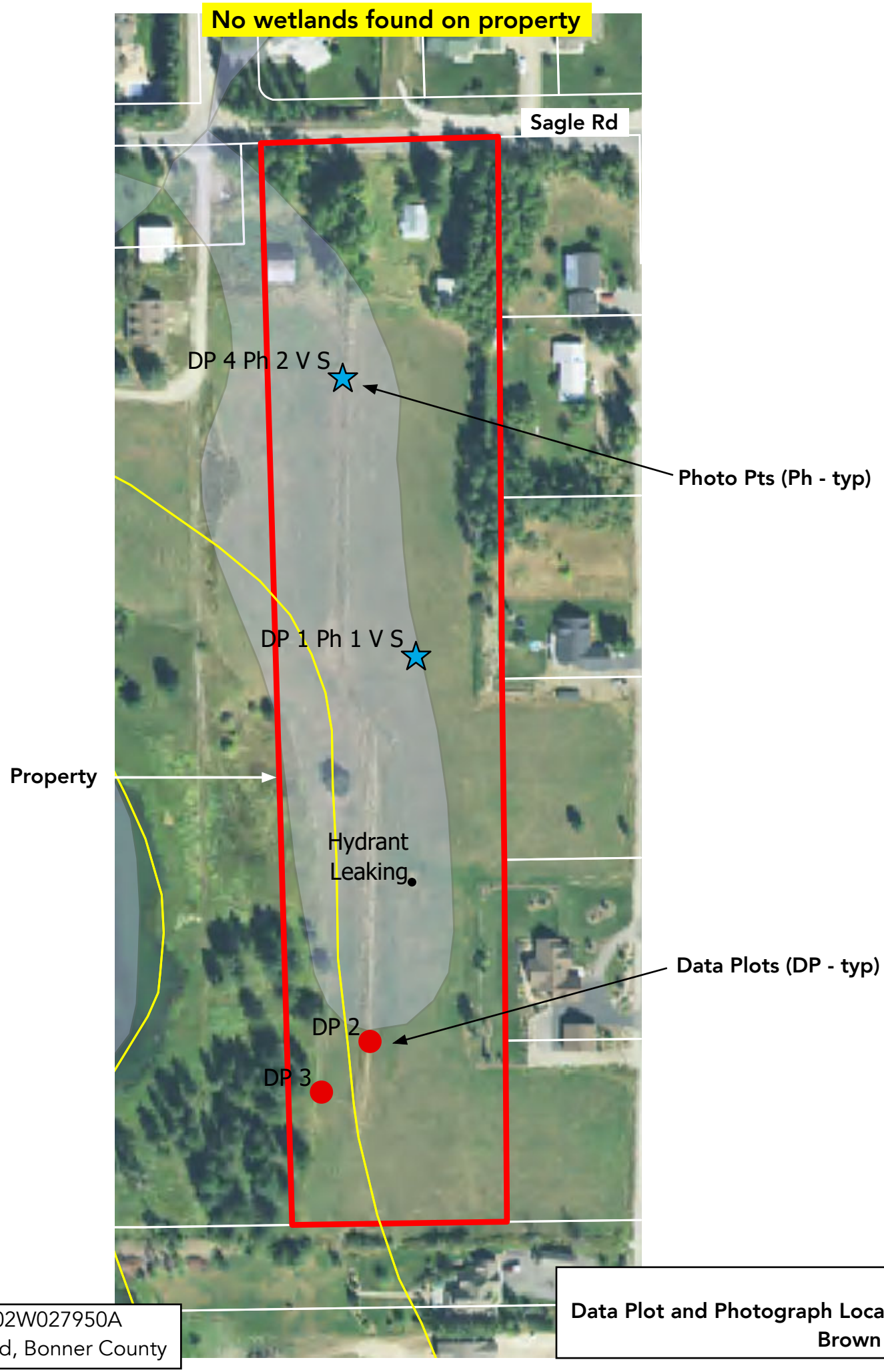
According to the 2008 Final Mitigation Rule (US Army Corps of Engineers 2018 [Federal Register/Vol. 73, No. 70 / Thursday, April 10, 2008 / Rules and Regulations]), under § 332.1 (c) the Final Mitigation Rule maintains the requirements set forth in Section 404(b)(1) Guidelines at 40 CFR part 230 which state that *"the permit applicant [is required] to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States. Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. Compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines"* (emphasis mine). According to § 230.93 (a)(2), restoration of impacted wetland is the first priority in the compensation sequence followed by purchasing credits (employing the use of approved Wetland Mitigation Banks within the service area) § 230.93 (b)(2) (US Army Corps of Engineers 2018).

The 1999 Montana Wetland Assessment Method is used to calculate the number of Wetland Credits to be purchased from the Valencia Wetland Mitigation Bank (Bank) in Priest River should there be any wetland impacts (fill > 1/10 acre) required as a result of the proposed development. The Assessment will result in a score between 1 and 12. This score is multiplied by the area to be filled. That result is the number of credits required to be purchased from the Bank. Currently one credit costs $28,000.

The **Bonner County Ordinance** imposes 40' wetland-to-structure setbacks.

There are no wetlands on the property.

Figure 1
Vicinity, NWI and NRCS Map
Brown Property



RP56N02W027950A
Sagle Rd, Bonner County

Figure 2
Data Plot and Photograph Location Map
Brown Property

Photo 1: View south from Data Plot 1. Vegetation is not hydrophytic, soil is not hydric, no evidence of wetland hydrology.

Photo 2: View south from Data Plot 4. Vegetation is not hydrophytic, soil is not hydric, no evidence of wetland hydrology.

Photo locations shown on Figure 2

Photosheet
Brown Property
June 6, 2024

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON 99362-9265

March 22, 1993

REPLY TO
ATTENTION OF:
Operations Division

SUBJECT: NPW No. 930100480

Mr. Bill Brown
108 2nd Avenue
Sandpoint, Idaho 83864

Dear Mr. Brown:

This is to inform you that your property located in W1/2 W1/2, NW1/4 SE1/4, Sec. 2, T.56N., R.2W., B.M., Bonner County, Idaho, is not subject to Department of the Army regulation under Section 404 of the Clean Water Act. This decision is based on the information that you submitted on March 8, 1993, and a site visit by Mr. Michael Doherty of the Coeur d'Alene Regulatory Office staff on March 10, 1993. No wetlands are present on this parcel. The National Wetland Inventory map incorrectly classified this area as a wetland.

This determination is applicable only to Department of the Army Permits administered by the Corps of Engineers. If you should have any questions or need further information, please call Mr. Doherty at (208) 765-7237.

Sincerely,

/s/ G. Dean Hilliard
G. Dean Hilliard
Chief, Regulatory Branch

Copy Furnished:

U. S. Fish and Wildlife Service
Division of Ecological Services
4696 Overland Road, Room 576
Boise, Idaho 83705-2890

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

Project/Site: Brown RP56N02W027950A **City/County:** Bonner **Sampling Date:** 06-Jun-24

Applicant/Owner: Soctt Brown **State:** ID **Sampling Point:** DP 1

Investigator(s): Tom Duebendorfer, PWS **Section, Township, Range:** S 2 T 56N R 2W

Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR E **Lat.:** 48.228338 **Long.:** -116.534200 **Datum:** WGS 84

Soil Map Unit Name: Mission silt loam **NWI classification:** PEM1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
None of required parameters observed. Plot not in wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		= Total Cover	
Herb Stratum (Plot size: 0.1 ac)				
1. Alopecurus pratensis	60	☑	42.9%	FAC
2. Potentilla recta	30	☑	21.4%	UPL
3. Festuca pratensis	15	☐	10.7%	FACU
4. Juncus tenuis	15	☐	10.7%	FAC
5. Lotus corniculatus	10	☐	7.1%	FAC
6. Bromus inermis	10	☐	7.1%	UPL
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	140		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	15	x 4 =	60
UPL species	40	x 5 =	200
Column Totals:	140 (A)		515 (B)

Prevalence Index = B/A = 3.679

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrologic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **5 - Wetland Non-Vascular Plants** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Vegetation is not hydrophytic - neither test met. Needs more than 50% of dominants to be hydrophytic.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: DP 1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR	2/2	100%						Silt Loam	
2-13	10YR	3/2	100%						Silt Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric indicators

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No indicators of hydrology

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

Project/Site: Brown RP56N02W027950A **City/County:** Bonner **Sampling Date:** 06-Jun-24

Applicant/Owner: Soctt Brown **State:** ID **Sampling Point:** DP 2

Investigator(s): Tom Duebendorfer, PWS **Section, Township, Range:** S 2 T 56N R 2W

Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR E **Lat.:** 48.227071 **Long.:** -116.534438 **Datum:** WGS 84

Soil Map Unit Name: Mission silt loam **NWI classification:** PEM1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
None of required parameters observed. Plot not in wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 0.1 ac)			
1. Alopecurus pratensis	50	☑ 32.3%	FAC
2. Tanacetum vulgare	35	☑ 22.6%	FACU
3. Vicia cracca	35	☑ 22.6%	UPL
4. Poa bulbosa	20	☐ 12.9%	UPL
5. Juncus tenuis	10	☐ 6.5%	FAC
6. Lupinus argenteus	5	☐ 3.2%	UPL
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	155	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	35	x 4 =	140
UPL species	60	x 5 =	300
Column Totals:	155 (A)		620 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrologic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **5 - Wetland Non-Vascular Plants** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Vegetation is not hydrophytic - neither test met. Needs more than 50% of dominants to be hydrophytic.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: DP 2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR	2/2	100%						Silt Loam	
2-13	10YR	3/2	100%						Silt Loam	

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

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

- ☐ Histosol (A1)
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- ☐ Black Histic (A3)
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- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
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Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric indicators

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
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- ☐ Hydrogen Sulfide Odor (C1)
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- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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- ☐ Drainage Patterns (B10)
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Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No indicators of hydrology

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Project/Site: Brown RP56N02W027950A **City/County:** Bonner **Sampling Date:** 06-Jun-24

Applicant/Owner: Soctt Brown **State:** ID **Sampling Point:** DP 3

Investigator(s): Tom Duebendorfer, PWS **Section, Township, Range:** S 2 T 56N R 2W

Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR E **Lat.:** 48.226905 **Long.:** -116.534678 **Datum:** WGS 84

Soil Map Unit Name: Mission silt loam **NWI classification:** PEM1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
None of required parameters observed. Plot not in wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size: 0.1 ac)			
1. Alopecurus pratensis	40	☑ 30.8%	FAC
2. Hieracium pratense	40	☑ 30.8%	UPL
3. Vicia cracca	20	☐ 15.4%	UPL
4. Tanacetum vulgare	20	☐ 15.4%	FACU
5. Lupinus argenteus	5	☐ 3.8%	UPL
6.	5	☐ 3.8%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	130	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	20	x 4 =	80
UPL species	65	x 5 =	325
Column Totals:	125 (A)		525 (B)

Prevalence Index = B/A = 4.200

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrologic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **5 - Wetland Non-Vascular Plants** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Vegetation is not hydrophytic - neither test met. Needs more than 50% of dominants to be hydrophytic.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: DP 3

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR	2/2	100%						Silt Loam	
2-13	10YR	3/2	100%						Silt Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric indicators

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No indicators of hydrology

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

Project/Site: Brown RP56N02W027950A **City/County:** Bonner **Sampling Date:** 06-Jun-24

Applicant/Owner: Soctt Brown **State:** ID **Sampling Point:** DP 4

Investigator(s): Tom Duebendorfer, PWS **Section, Township, Range:** S 2 T 56N R 2W

Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR E **Lat.:** 48.229253 **Long.:** -116.534552 **Datum:** WGS 84

Soil Map Unit Name: Mission silt loam **NWI classification:** PEM1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
None of required parameters observed. Plot not in wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		**= Total Cover**	
Herb Stratum (Plot size: 0.1 ac)				
1. Vicia cracca	60	☑	48.0%	UPL
2. Bromus inermis	20	☑	16.0%	UPL
3. Alopecurus pratensis	20	☑	16.0%	FAC
4. Poa bulbosa	20	☑	16.0%	UPL
5.		☐	0.0%	
6.	5	☐	4.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	125		**= Total Cover**	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		**= Total Cover**	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	120 (A)		560 (B)

Prevalence Index = B/A = 4.667

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrologic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **5 - Wetland Non-Vascular Plants** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Vegetation is not hydrophytic - neither test met. Needs more than 50% of dominants to be hydrophytic.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: DP 4

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR	2/2	100%						Silt Loam	
2-13	10YR	3/2	100%						Silt Loam	

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

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- ☐ Histosol (A1)
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- ☐ 2 cm Muck (A10)
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- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric indicators

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
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- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
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- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
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- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
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Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No indicators of hydrology

Tom Duebendorfer - Professional Wetland Scientist (#000157), Biologist, Botanist

OBJECTIVE

Provide botanical and ecological services to a wide range of organizations and individuals for projects involving land development, wetland delineation, vegetation mapping, rare plant surveys, resource inventories, Environmental Assessments, Biological Evaluations and Assessments, and research-level studies on specific habitats or species.

EDUCATION

WSPSS, SWS Hydric Soils Workshop, Soils and Hydrology, June 2009
Wetland Training Institute, Soils and Hydrology, August 1990
Humboldt State University, Arcata, California
M.A. Biology May 1987
California State Teaching Credential May 1987
B.A. Biology June 1977
University of California, Irvine (2 years - biology major)

EMPLOYMENT

- **Self-employed wetland and botanical consultant (1981 to present)**

  Provided botanical and wildlife surveys, floristic research, habitat characterization, ecological sampling, synecological analysis, aerial photo mapping, wetland delineation, impact analysis, restoration and mitigation, resource planning, permitting, rare and endangered plant surveys, plant taxonomy, soil analysis, computer-aided multivariate analyses and statistics, computer-aided graphics and drafting. Involved with design (as part author/editor) of Washington Dept of Ecology Hydrogeomorphic approach to wetland function assessment program (Assessment Team). Trained in E WA DOE Assessment Methodology (assisted in development of the methodology). Wetland Mitigation Bank preparation. Teaches wetland delineation and plant identification courses to Tribes, agencies, and groups.

  Project locations include rare plant surveys/studies and wetland work in southern, central, northern and coastal California; coastal, southwestern, and northeastern Oregon; north, east-central, and southwest Idaho; eastern and western Washington; and northwest Montana.

- **Senior Wetland Ecologist, Client/Project Manager, Corporate Botanist (1989-1994)**

  David Evans and Associates, Inc. Bellevue, Washington

  Provided wetland delineation, impact assessment, conceptual and final mitigation design, monitoring, cumulative impact assessment, wetland permitting, habitat characterization, rare plant and T&E animal surveys, Biological Evaluations and Assessments, as well as instruction and guidance in systematics and classification to staff in 7 west coast offices. Maintained excellent rapport with clients and other project team members (both in office and as field crew leader). Managed projects from proposals, contracting, budgeting, scheduling and invoicing, to collections.

  Project locations include: Pacific Northwest, from central and coastal Oregon to eastern, western, and coastal Washington, and northwest Montana.

CERTIFICATIONS

Professional Wetland Scientist, Society of Wetland Scientists (#000157)
Certified Wetland Delineator, Corps of Engineers (Seattle District)
Qualified Wetland Specialist, Spokane County, Washington
Qualified Wetland Specialist, City of Spokane, Washington
Completed Training in NEPA/EPA Process
Completed Soils and Hydrology workshops (WTI); Hydric Soils (WSSPSS - Updates 2009)

SPECIFIC EXPERIENCE

Habitats include: dune coastline, coastal and inland forested, scrub, and marsh wetlands, oak woodlands, steppe scrubland, grasslands, sagebrush, agricultural areas (wetlands), coniferous and deciduous montane, alpine, bog (fen), and serpentine vegetation.

Permitting knowledge and direct use of wetland methodologies (USFWS, US Army Corps of Engineers, WA Dept of Ecology, and local county and city jurisdictions); knowledge of Corps Permit process. Restoration activities. Biological Assessments (BA), USFS Evaluations (BE), Environmental Assessments (EA); SEPA/NEPA; T&E species monitoring, Raptor Monitoring, Wetland Mitigation Bank Design.

Rare plant studies include approximately 45 sensitive plant and vegetation surveys on private, state, and federal lands for small to medium scale hydroelectric plants, stream corridors, sewage treatment facilities, water treatment facilities, prison site, seeding experiments, road and highway construction, transmission corridors (utilities), fiber optic cable routes, and mining companies. Biological Evaluations for USFS-listed sensitive species in four states.

Clients (independently and during tenure as employee) include:

Small- and Large-scale Developers:
Burlington-Northern, Puget Western, Glacier Park Company, Trillium Corporation, Quadrant, Blackhawk/Port Blakely Communities, Coldwater Creek, Valencia Wetlands Trust, Waterfront Property Mgmt., Kirk-Hughes Development, Fortress LLC, & others

Public Entities:
Washington Department of Ecology, Benewah County (through EDA), Federal Highways Administration, Bureau of Reclamation, King Co., US Army Corps of Engineers, Spokane County Engineering and Public Works, Oregon Nature Conservancy, Humboldt County Planning, Humboldt State University Research Program; Benewah County; Idaho Soil and Conservation District, City of Winchester, Idaho Transportation Department, Washington Department of Transportation, Kalispell Indian Tribe, City of Colville, Rathdrum

Communications (fiber optic projects):
AT&T, MCI/WorldCom, Cascade Utilities

Exploratory and Active Mining Companies:
Emerald Creek Garnet Company, American Gold Resources, Cal Nickel Corp., Baretta, Noranda

Assisting other Consulting Firms and Numerous Private Landowners.
The Soils Group, Intermountain Resources, Inc., Hart-Crowser, Inc., Welch-Comer Eng., Land Profile, Inc., Selkirk Environmental, David Evans and Associates, J.A. Sewell and Assoc., EarthTech, ALSC Architects; Ecological Resources, Forsgren Assoc., JUB Eng., Adolfson Assoc. Copper Basin Constr., Toothman-Orton Eng., Rocky Point Investments, HAWKEFA, Tate Engineering.

PUBLICATIONS

Duebendorfer, T.E. 1990. *"An Integrated Approach to Enhancing Rare Plant Populations through Habitat Restoration: II. Habitat Characterization through Classification of Dune Vegetation."* Pp. 478-487 in: Bonnicksen, T.M. and H.G. Hughes, eds. Proceedings of the first annual meeting of the Society for Ecological Restoration and Management. Also presented at Society of Wetland Scientists, May 1993.

Pickart, A.J., L.M. Miller, and T.E. Duebendorfer. 1998. *"Yellow bush lupine invasion in northern California coastal dunes. I. Ecological impacts and manual restoration techniques*". Restoration Ecology Vol 6 No 1, pp59-68.

Seattle Audubon Series, "*Wetland Plants of the Western Washington and NW Oregon"* (Cooke 1997, editor): My role was as a contributor and technical editor.

Hruby, T., S. Stanley, T. Granger, T. Duebendorfer, R. Friesz, B. Lang, B. Leonard, K. March, and A. Wald. 2000. Methods for Assessing Wetlands Functions. Volume II, Part 1: Assessment Methods - Depressional Wetlands in the Columbia Basin of Eastern Washington, WA State Department of Ecology Publication #00-06-47.

Fieldbook of Plant Uses (North Idaho) - self published field booklet (2019)