SCHRIEBER MEADOWS MITIGATION SITE

Project Overview

MDT Project Number: NH 27 (021) UPN # 1027001

Watershed: Watershed #1 – Kootenai River Basin

Monitoring Year: 2023

Years Monitored: 13th year of monitoring.

Corps Permit Number: NWO-2004-90280-MTH

SPA Authorization Number: MDT-R1-88-2010

Monitoring Conducted By: Confluence Consulting Inc.

Dates Monitoring Was Conducted: July 10-11, 2023

Purpose of the Approved Project:

The site was constructed to provide 17.84 acres of compensatory wetland mitigation credits and 35,551 stream mitigation credits for wetland and stream impacts associated with the US Highway 2 Swamp Creek – East project and highway impacts associated with future transportation project-related wetland and stream impacts in Watershed #1 – Kootenai River Basin. The project was designed to create new wetlands, restore degraded wetlands, and enhance existing wetlands by restoring natural hydrology in the meadow and constructing a series of shallow depressional wetland cells. The project restored the Coyote Creek channel and added 3,327 linear feet of stream length.

Site Location: The mitigation site includes approximately 60 acres within the 147-acre MDT-owned parcel and a 16-acre easement within the Kootenai National Forest.

Latitude: 48.110423 **Longitude:** –115.41562

County: Lincoln **Nearest Town:** Libby, MT

Map Included: See Figure 1, page 11

Mitigation Site Construction Started: Fall/2007 **Construction Ended:** Fall/2011

Dates of Any Recent Corrective or Maintenance Activities (since previous report):

Activity: Weed Spraying **Date:** Forest Service sprayed the northern portion of the mitigation site in July of 2023 to combat orange hawkweed and ox-eye daisy infestations.

Specific recommendations for any additional corrective actions: Weed treatment will continue in 2024. Weed treatments should focus on Canada thistle and ox-eye daisy, which have increased across the site's northern portion since 2021.

Anticipated Wetland Credit Acres: 17.84

Wetland Credit Acres Generated to Date: 28.52

Stream Credits Generated to Date: 35,551

Previous Monitoring Reports: https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

Monitoring Period: 5 years from construction completion or until concurrence by US Army Corps of Engineers (USACE).

Requirements (from approved mitigation plan or Department of Army (DA) permit conditions)

Performance Standards: A summary of performance standards, associated success criteria, and 2023 achievement status for the Schrieber Meadows site is provided in Table 1.

Table 1. Summary of Performance Standards

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Wetland Characteristics	Meet the three parameter criteria for hydrology, vegetation, and soils as outlined in the 1987 Wetland Delineation Manual and 2010 Mountains, Valleys, Coast Region.	Y	Areas identified as wetland habitat within the mitigation site meet the three parameter criteria.
Wetland Hydrology	Soil saturation present for at least 12.5 percent of the growing season.	Y	Areas identified as wetland habitat within the mitigation site exhibit soil saturation for a minimum 12.5 percent of growing season.
Hydric Soil	Hydric soil conditions present or appear to be forming.	Y	Hydric soil characteristics have developed throughout all constructed wetlands.
	Soil is sufficiently stable to prevent erosion.	Y	In 2023, disturbed soil was stable and did not exhibit signs of erosion.
	Soil is able to support plant cover.	Y	Plant cover is well established across disturbed soils.
Hydrophytic Vegetation	Achieved where combined absolute cover of facultative or wetter species is ≥70 percent	Y	Areas identified as wetland habitat within the mitigation site approximately 90% hydrophytic vegetation (OBL, FACW, and FAC).
	Montana State-listed noxious weeds do not exceed 5 percent absolute cover.	Y	State-listed noxious weeds are estimated below 5 percent absolute cover within wetland areas.
	Noxious weeds do not exceed 10 percent cover within the riparian buffer areas.	Y	State-listed noxious weeds are estimated between 3 to 5 percent absolute cover within the riparian buffer.
	Creditable buffer areas must have at least 50 percent aerial cover of non-weed species by the end of the monitoring period.	Y	Non-weed vegetation consists of greater than 70 percent cover, by a near-monoculture of reed canary grass, within riparian buffer areas.
	Achieved where combined aerial cover of riparian and stream bank vegetation communities is ≥70 percent.	Y	Riparian and stream bank vegetation communities support greater than 70 percent cover.
	Planted trees and shrubs will be considered successful where they exhibit 50 percent survival after 5 years.	N	Following planting installation, unanticipated high groundwater elevations drowned a majority of plantings by the end of the second growing season. Approximately 2 percent survival was noted in 2023.
Stream Bank Vegetation	Considered successful when banks are vegetated with a majority of deep-rooting riparian plant species having root stability indexes ≥6.	Y	Reed canary grass dominates the stream banks and has a root stability index of 9.
Channel Restoration Success	Revegetation along the new Coyote and Schrieber Creek channel corridors will be considered successful when banks are vegetated with a majority of deep-rooting riparian and wetland herbaceous having root stability indexes ≥ 6 and woody plant species.	Y	The majority of stream bank vegetation along the constructed Coyote and Schrieber Creek channel corridors is dominated by reed canary grass, which has a stability rating of 9.
	The intent of the stream restoration is to allow for the stream to naturally migrate within the floodplain and to give it enough room to move and stabilize itself within the site.	Y	The stream has plenty of space within the floodplain for natural migration. The stream currently appears stable with no lateral adjustment observed following construction.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Open Water	It is the intent of the project to provide open water during the spring and early summer within excavated depressions. As the growing season progresses and the groundwater levels recede, it is anticipated that vegetation will germinate within the majority of the depressions. Open water with submerged and/or floating vegetation will therefore be considered successful and creditable.	Y	Excavated depressions within the very northern portion of the site experience seasonal drawdown and rooted floating hydrophytic vegetation development has been observed. Those depressions in the southern portion of the site appear to support perennial inundation with an established aquatic macrophyte community.
Upland Buffer	Noxious weeds do not exceed 5 percent cover within upland buffer areas.	Y	In 2023, noxious weed cover was less than 5 percent within the upland buffer.
	Any area disturbed within creditable buffer zone must have at least 50 percent aerial cover of non-weed species by end of monitoring period.	Y	Disturbed areas have established greater than 50 percent aerial cover by non-weed species.
Weed Control	Will be based upon annual monitoring of the site to determine weed species and degree of infestation within the site, and control measures based upon the monitoring results will be implemented by MDT to minimize and/or eliminate the intrusion of State Listed Noxious weed species within the site.	Y	State-listed noxious weed species across the site have been monitored and mapped during each post-construction monitoring event. MDT administers an ongoing weed-control program. Weeds were sprayed on site in July 2023. USFS conducted weed spraying in the northern portion of the project to combat infestations of orange hawkweed and ox-eye daisy that emanated from within the forest boundary.

Summary Data

A total of 45.84 acres of wetland and aquatic habitat were delineated within the Schrieber Meadows wetland mitigation site in 2023 (Table 2). This includes 32.56 acres of wetland, 0.34 acres of stream channel, 5.81 acres of open water, and 7.13 acres of stream channel buffer (Table 2).

Table 2. Wetland & Aquatic Habitat Acreage Delineated From 2020 Through 2023

Habitat Type	2020 Acreage	2021 Acreage	2022 Acreage	2023 Acreage
Wetland	31.44	31.20	33.38	32.56
Stream Channel	0.34	0.34	0.34	0.34
Open Water	7.44	6.63	6.47	5.81
Riparian Stream Buffer	8.30	8.30	7.52	7.13
Total Wetland & Aquatic Habitat	**47.52**	**46.47**	**47.71**	**45.84**

Wetland Delineation – The original wetland delineations conducted in 2004 and 2005, prior to the project's construction, identified four wetland areas totaling approximately 15.56 acres within the mitigation project area. A total of approximately 3.72 acres of mitigation credit were developed in the original pilot project in 2007, involving 2.38 credit acres of wetland creation, 0.75 credit acres of restoration (rehabilitation) of existing wetlands (1.12 acres), and 0.59 credit acres of upland (2.96 acres) buffer around these wetlands. After the second construction phase was completed, the delineation conducted in 2012 mapped a total of 31.44 acres of wetland across the site. A total of 32.56 acres of

wetland were delineated at the site in 2023 (Table 2; see maps in Appendix A). The total wetland acreage delineated in 2023 was a decrease of 1.12 acres from 2022. This decrease in wetland acreage is likely the result of the drought conditions the region was experiencing in 2023, which was evident within the northern and northwestern portions of the site. This portion of the appears to be in flux, as in 2022, this area experienced an increase in wetland acreage.

In 2020, the USACE (N. Green, personal communication, May 6, 2020) provided guidance on open water, defining it as "areas of open water of any depth with less than 5% rooted emergent vegetation, no vegetation, submerged non-rooted vegetation, and/or submerged vegetation rooted in the substrate that does not extend above the water surface." In accordance with this recent USACE guidance, open water accounted for 5.81 acres of the mitigation site in 2023. A beaver dam observed at the outlet of Schrieber Lake from 2019 through 2023, is contributing to a shift in wetland development by increasing perennial inundation across the southern two-thirds of the Schrieber Meadows site. Initially, the elevated water table led to an increase in open water. However, as time has passed, native vegetation such as *Carex* spp. has begun establishing in the open water areas.

Vegetation – A total of 144 plant species have been identified at the site from 2010 through 2023 (Appendix B). No new species were identified in 2023. Three upland and five wetland community types (CT) were identified and mapped at the site in 2023 (Figure A-3, Appendix A). This includes two new upland communities, Upland Type 17 – *Bromus inermis* and Upland Type 18 – *Bromus inermis/Alopecurus* spp. Upland Type 17 largely replaced Upland Type 9 – *Alopecurus spp./Bromus inermis,* which was removed as a CT in 2023. Upland Type 17 largely replaced Upland Type 9 in the site's northern portion due to relatively little *Alopecurus* spp. being observed within the CT in 2023. Upland Type 18 – *Bromus inermis/Alopecurus* spp. replaced Upland Type 9 – *Alopecurus* spp*./Bromus inermis* in the southwestern portion of the site due to a shift in dominance from *Alopecurus* spp. to *Bromus inermis*. Vegetation communities were identified by species composition and dominance. The community composition for each is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and community boundaries are shown in Figure A-3 (Appendix A).

The vegetation communities identified on site in 2023 include the following:

- Upland Type 8 – Elymus repens/Pascopyrum smithii
- Upland Type 17 – Bromus inermis
- Upland Type 18 – Bromus inermis/Alopecurus spp.
- Wetland Type 3 – Phalaris arundinacea
- Wetland / Open Water Type 5 – Aquatic Macrophytes/Open Water
- Wetland Type 14 – Agrostis capillaris/Phleum pratense
- Wetland Type 15 – Typha latifolia/Eleocharis palustris
- Wetland Type 16 – Alopecurus spp.

A notable shift in species cover and dominance due to the beaver dam and perennial surface water has been observed within Wetland Type 3 – *Phalaris arundinacea* since 2019. In 2023, inundation levels within Wetland Type 3 were an average of 2-2.5 feet, nearly the same as in 2022. Perennial inundation has continued to increase within this community since 2019, especially around Coyote Creek, the ditch adjacent to Highway 2, and between the excavated depressions. Reed canary grass still dominates, but large patches of the dense monoculture were absent, observed as dead, dying, or floating mats. There was increased cover by native species, such as *Carex* spp., colonizing the open water areas created after 2019. These shifts in cover by reed canary grass, *Carex* spp., and perennial surface water result from more than four years of deep perennial inundation. Extended periods of flooding have been shown to reduce nonnative reed canary grass cover, germination, and rhizome production effectively (Jenkins et

al. 2008; WRCGM 2009; Waggy 2010), which supports a greater diversity of native vegetation. These shifts in species cover and dominance are expected to continue in areas of deep perennial inundation.

Vegetation cover was measured along three belt transects (T-1, T-2, and T-3) in 2023 (Figure A-2, Appendix A). Photographs of the transect endpoints are provided in Appendix C. Table 3 summarizes the data for T-1 from 2012 and 2020 through 2023. T-1 is 318 feet long and intersects Wetland Types 3 – *Phalaris arundinacea* and 5 – Aquatic Macrophytes/Open Water. Wetland Type 3 and Open Water Type 5 accounted for 56.30 and 43.70 percent of the transect, respectively, in 2023. The increase in hydrophytic vegetation cover was due to an increase of *Carex* spp. and other hydrophytes within formerly open water. Total vegetative cover has increased by five percent since 2022. This transect has not intersected an upland area since 2010.

Table 3. Data Summary for T-1 From 2012 and 2010 through 2023 at the Schrieber Meadows Site

Monitoring Year	2012	2020	2021	2022	2023
Transect Length (feet)	**318**	**318**	**318**	**318**	**318**
Vegetation Community Transitions Along Transect	7	6	6	5	5
Vegetation Communities Along Transect	3	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	2	1	1	1	1
Total Vegetative Species	32	10	7	7	12
Total Hydrophytic Species	22	10	7	7	12
Total Upland Species	10	0	0	0	0
Estimated % Total Vegetative Cover	75	45	45	40	45
Estimated % Unvegetated	25	55	55	60	55
% Transect Length Comprising Hydrophytic Vegetation Communities	62	34.3	34.3	34.3	56.30
% Transect Length Comprising Upland Vegetation Communities	13	0	0	0	0
% Transect Length Comprising Open Water with Aquatic Macrophytes	25	65.7	65.7	65.7	43.70

Data collected on T-2 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 4. T-2 is 594 feet long and alternates between Wetland Type 3 – *Phalaris arundinacea,* Wetland Type 14 – *Agrostis capillaris/Phleum pratense,* Wetland Type 15 – *Typha latifolia/Eleocharis palustris*, Wetland Type 16 – *Alopecurus* spp., and Upland Type 17 – *Bromus inermis*. Hydrophytic vegetation communities comprised 80.64 percent of the transect, a decrease of 19.36 percent since 2022 due to an increase in uplands in the site's northern portion. The total vegetative cover was estimated at 65 percent, consistent with that observed in 2022.

T-3 begins near constructed wetland Cell 8 along the Middle Coyote Creek reach and extends east 440 feet to the edge of the former Coyote Creek channel along the eastern site boundary. The data recorded on T-3 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 5. The transect intervals alternated between Wetland Types 3 – *Phalaris arundinacea* and 5 – Aquatic macrophytes/Open Water. Wetland Type 3 and Wetland/Open Water Type 5 accounted for 79 and 21 percent of the transect, respectively, in 2023. The increase in hydrophytic vegetation communities was due to the reduction in open water along the transect, which was replaced by hydrophytic species. In 2023, Wetland/Open Water Type 5 met the recent USACE definition of open water.

Table 4. Data Summary for T-2 From 2012 and 2020 through 2023 at the Schrieber Meadows Site

Monitoring Year	2012	2020	2021	2022	2023
Transect Length (feet)	**594**	**594**	**594**	**594**	**594**
Vegetation Community Transitions Along Transect	16	8	8	8	8
Vegetation Communities Along Transect	3	4	4	4	5
Hydrophytic Vegetation Communities Along Transect	3	4	4	4	4
Total Vegetative Species	23	29	33	33	35
Total Hydrophytic Species	17	24	30	30	30
Total Upland Species	9	5	3	3	5
Estimated % Total Vegetative Cover	60	65	65	65	65
Estimated % Unvegetated	40	35	35	35	35
% Transect Length Comprising Hydrophytic Vegetation Communities	59.1	100	100	100	80.64
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0	19.36
% Transect Length Comprising Open Water with Aquatic Macrophytes	40.9	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0

Table 5. Data Summary for T-3 From 2012 and 2020 through 2023 at the Schrieber Meadows Site

Monitoring Year	2012	2020	2021	2022	2023
Transect Length (feet)	**440**	**440**	**440**	**440**	**440**
Vegetation Community Transitions Along Transect	4	4	4	4	2
Vegetation Communities Along Transect	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	2	2	2	1	1
Total Vegetative Species	9	13	9	9	9
Total Hydrophytic Species	7	13	9	9	9
Total Upland Species	2	0	0	0	0
Estimated % Total Vegetative Cover	50	50	50	45	55
Estimated % Unvegetated	50	50	50	55	45
% Transect Length Comprising Hydrophytic Vegetation Communities	53	53.4	52.5	49.5	79
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0	0
% Transect Length Comprising Open Water with Aquatic Macrophytes	47	46.6	47.5	50.5	21

Weeds - During the July 2023 monitoring event, 30 occurrences of Priority 2B noxious weed species were mapped at the site, including Canada thistle (*Cirsium arvense*) and ox-eye daisy (*Leucanthemum vulgare*). Three occurrences of orange hawkweed (*Hieracium aurantiacum*), a Priority 2A noxious weed in Montana, were also mapped. Noxious weed infestations occurred in areas less than 0.1-acre and were present in wetland and upland habitats (Figure A-3, Appendix A). Most noxious weed infestations were found in upland and wetland habitats north of the access road. Canada thistle continues to be the most prominent weed within the site, and a significant increase in ox-eye daisy was observed in the northwest corner of the property around Cell 1 in 2023, continuing a trend observed in 2022. Overall, noxious weed cover across the site was estimated to be below five percent in 2023. Annual weed spraying efforts have effectively reduced infestation size and cover of noxious weed populations across the site to meet the success criteria outlined in the performance standards. The Montana Department of Transportation has an ongoing weed-control program, which will continue in 2024.

A total of 1,000 speckled alders (*Alnus incana*) and 750 willows (*Salix* spp.) were planted along the newly constructed stream channel and wetland cells in the northern third of the site. In 2023, 37 live plants were observed across the mitigation site, indicating approximately two percent survival. No willow (*Salix* spp.) plantings were observed during the 2023 monitoring event. The 37 surviving speckled alder plantings appeared stunted and had poor vigor due to aggressive competition from reed canary grass and perennial deepwater conditions. Balsam poplar (*Populus balsamifera*) volunteers were observed growing around the edges of some excavated wetland cells in the project area north of the access road, along with speckled alder and one Bebb's willow (*Salix bebbiana*) volunteer.

Hydrology – During the 2023 investigation approximately 65% of the site was inundated, which is a slight reduction in inundation from 2022, likely due to drought. The average surface water depth within the inundated areas was estimated at 1.5 feet, with a range of depths from 0 to 5 feet, necessitating the use of kayaks in some areas to complete the 2023 monitoring. Open water accounted for 5.81 acres in 2023, The deepest standing water is located within excavated cells south of the access road, within Coyote Creek, and the former Coyote Creek channel along the east project boundary. The surface-water depth at the emergent vegetation and open-water boundary was estimated at two feet, the same as in 2022. The southern two-thirds of the site was inundated and/or saturated because of the reconstructed Coyote Creek channel, abundant surface water from beaver activity, and groundwater flowing through the valley. The high surface water elevations observed on-site result from past restoration efforts to plug existing drainage ditches and channels, the subsidence of histosol soil elevations over time, and the beaver dam located at the outlet of Schrieber Lake.

The area north of the access road was dryer in 2023 than in 2022, as evidenced by the decrease in wetland acreage in this area. This same area saw an increase in wetland acreage in 2022, indicating that the wetlands in this area are marginal and highly influenced by precipitation. All excavated wetland cells contained surface water or were saturated to the soil surface. The upper portion of the Coyote Creek channel was dry in July 2023, which is typical for an ephemeral stream channel located above the main hydrologic spring source for Coyote Creek and just upstream of the site's access road. The spring provides the primary perennial source of hydrology to Coyote Creek downstream of this location. Direct precipitation also contributes to wetland hydrology, but the high groundwater table is the primary water source across the site. Precipitation accumulation for this area in 2023 was 7.36 inches from January through July, significantly less than the 11.52 inches reported for the same time in 2022 and less than the historical average of 9.35 inches (NRCS 2023). The reduction in precipitation in 2023 was a contributing factor in the loss of wetland acreage in the northern portion of the project area.

Soils – Soil test pits were excavated at ten locations to evaluate the extent of hydric soil development across the site in 2023 (Appendices A and B). Soil textures within wetland test pits ranged from loamy sand to silty clay. Hydric soil indicators were observed in wetland test pits, including redox dark surface, thick dark surface, histic epipedon, loamy gleyed matrix, and depleted matrix. Soil textures within upland test pits ranged from loamy sand to silty clay loam. Many upland soil pits contained unusual soils with a low chroma and high value that could meet the definition of a depleted matrix. They also had a very fine texture resembling corn starch. Upland plants generally dominated these areas and did not contain wetland hydrology, indicating these upland soils contained volcanic ash deposits and not from hydric soil development. Additional field observations for the upland data points are provided in the Corps wetland determination data forms for the Western Mountains, Valleys, and Coast Region in Appendix B.

Photographs – Ten photo points were established within the pilot project, including three constructed cells, initially monitored in 2010. A total of 20 photo points were established in 2012 in response to the increased project area scope and size, including the reestablishment of photo point 7 from its original 2010 location. In addition to established photo points, photographs were taken at each surveyed stream cross-section, sampled data points, and vegetation transect endpoints. Photo point locations are

illustrated in Figure A-2 (Appendix A) and the photographs are provided in Appendix C. Please refer to previous years Schrieber Meadows Mitigation monitoring reports for all previous annual photographs at the MDT website: (https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx).

Functional Assessment – The 2008 MDT Montana Wetland Assessment Method (MWAM) functional assessment results for 2023 are summarized in Table 6. Three separate Assessment Areas (AAs) were used to evaluate the site: Creation AA, Enhancement AA, and Restoration AA. Completed functional assessment forms for all three AAs are provided in Appendix B. All wetlands within the Schrieber Meadows site rate as Category I wetlands. Functional scores and ratings have remained nearly constant since 2015. All AAs received high or exceptional ratings for many assessment parameters, including Listed/Proposed Threatened & Endangered Species Habitat, due to the documentation of grizzly bears on the site in recent years. Other high and/or exceptional functions include General Wildlife Habitat, Short- and Long-Term Surface-Water Storage, Sediment/Nutrient/Toxicant Removal, Sediment/Shoreline Stabilization, Production Export/Food Chain Support, and Groundwater Discharge/Recharge.

Table 6. Montana Wetland Assessment Method Summary for Schrieber Meadows Site

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2023 Enhancement AA	2023 Creation AA	2023 Restoration AA
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	High (0.8)	High (0.8)	High (0.8)
Montana Natural Heritage Program Species (MTNHP) Habitat	High (0.9)	High (0.9)	High (0.9)
General Wildlife Habitat	Exc (1.0)	Exc (1.0)	Exc (1.0)
General Fish/Aquatic Habitat	Low (0.2)	Mod (0.6)	NA
Flood Attenuation	Mod (0.5)	Mod (0.5)	Mod (0.5)
Short- and Long-Term, Surface-Water Storage	High (1.0)	High (1.0)	High (0.8)
Sediment/Nutrient/Toxicant Removal	High (1.0)	High (0.9)	Mod (0.6)
Sediment/Shoreline Stabilization	High (1.0)	High (1.0)	High (1.0)
Production Export/Food Chain Support	High (0.9)	Exc (1.0)	Exc (1.0)
Groundwater Discharge/Recharge	High (1.0)	High (1.0)	High (1.0)
Uniqueness	Mod (0.4)	Mod (0.4)	Mod (0.4)
Recreation/Education Potential (bonus points)	High (0.2)	High (0.2)	High (0.2)
Actual Points/Possible Points	**8.9/11**	**9.3/11**	**8.2/10**
% of Possible Score Achieved	**82%**	**86%**	**82%**
Overall Category	**I**	**I**	**I**

Wildlife – Fifteen bird species were identified in 2023. The two bird boxes installed at the site are functional and appear to have been used for nesting in 2023. Herptile observations included Columbia spotted frogs (*Rana luteiventris*) within many of the excavated wetland cells, garter snakes (*Thamnophis sirtalis*), and an unidentified turtle species (most likely Western painted turtles observed in the past on both Schrieber sites). Mammal observations at the site included Columbian ground squirrels (*Urocitellus columbianus*), white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethicus*), and one elk (*Cervus canadensis*) carcass. Fish species observed include bluegill (*Lepomis macrochirus*), brook trout (*Salvelinus fontinalis*), and smallmouth bass (*Micropterus dolomieu*).

Stream Monitoring – The survey results for 11 permanent cross-sections established along the constructed Coyote Creek (Figure A-2, Appendix A) are shown in Appendix D. The 2023 data was

compared to the previous surveys and discussions to assess stream channel stability. Generally, the constructed channel's banks were well-vegetated and exhibited stable conditions. Consequently, no major channel morphological changes have been observed throughout the monitoring years.

Credit Summaries

Stream Credits - Completely restoring sinuosity and stream length to Coyote Creek was intended to create a new channel length of approximately 7,756 linear feet, which is an overall increase of 3,327 linear feet from the previously channelized length of 4,429 linear feet. As part of the Montana Stream Mitigation Procedure (USACE, 2010), riparian and stream credits are added together to calculate the total stream mitigation credits (Table 7).

Table 7. Determination of Stream Mitigation Credits for the Schrieber Meadows Site

Factors	Upper Coyote Creek (USFS)	Coyote Creek Spring Area	Middle Coyote Creek (MDT)	Perennial Spring Channel	Lower Coyote Creek[(b)]
Net Improvement	2.50	0.00	2.50	2.50	2.50
Stream Status	0.05	0.05	0.05	0.05	0.05
Type of Protection	0.20	0.20	0.20	0.20	0.20
Mitigation Timing	0.10	0.10	0.10	0.10	0.10
Comparative Stream Order	0.20	0.20	0.20	0.20	0.20
Location	0.10	0.10	0.10	0.10	0.10
Sum of Factors (M)	3.15	0.65	3.15	3.15	3.15
Linear Feet (L)	1,752	190	3,179	400	2,425
Total Stream Credits (M × L)	**5,519**	**123**	**10,014**	**1,260**	**7,639**
Total Stream Credits[(a)] = 24,555					
Total Mitigation Credits (Riparian + Stream) = 10,996 + 24,555 = 35,551					

(a) Credits were calculated using the Montana Stream Mitigation Procedure [USACE, 2010].
(b) Lower Coyote Creek was formerly Merged Coyote/Schreiber Creek channel in mitigation plan.

Wetland Credits - The pilot project, constructed in 2007, generated approximately 3.72 mitigation credit acres, including 2.38 credit acres of wetland creation, 0.75 credit acre for restoration (rehabilitation) of existing wetlands (1.12 acres restored), and 0.59 credit acre of upland buffer (2.96 acres maintained) around the wetlands. The pilot project was integrated into the larger Schrieber Meadows mitigation project constructed in 2011. Table 8 provides the credits generated at the Schrieber Meadows site for the approximately 60-acre, full-scale project and incorporates the original pilot Schrieber Meadows mitigation project.

A total of 32.56 acres of wetland habitat were delineated at the Schrieber Meadows site in 2023, including 23.44 acres of creation, 2.35 acres of restoration, and 6.77 acres of enhancement (Table 8). A total of 44.94 acres, including 6.65 acres of upland buffer, -0.08-acre project impacts, and 5.81 acres of open water, were used to calculate the mitigation credit acres. In accordance with the USACE-approved performance standard for this site, open water areas with submerged and/or floating vegetation will be considered successful and creditable. The open water areas at the site are considered successful and creditable as they exhibited less than 5% emergent vegetation and a diversity of submerged and floating aquatic macrophytes. After applying the USACE-approved ratios to these values, a total of 28.52 mitigation credit acres have been estimated in 2023, which is 11.28 credit acres more than the targeted 17.24 credit acres originally planned for this site.

Table 8. Summary of Wetland Mitigation Credits at the Schrieber Meadows Site from 2013 and 2022-2023

Mitigation Type	Total Proposed Acreage	Ratio	Proposed Credit Acres	2013 Delineated Acreage	2013 Credit Acres	2022 Delineated Acreage	2022 Credit Acres	2023 Delineated Acreage	2023 Credit Acres
Creation – USFS/MDT Property	8.91	1:1	8.91	22.43	22.43	24.67	24.67	23.44	23.44
Restoration on USFS/MDT Property	3.46	1.5:1	2.31	3.46	2.31	2.35	1.57	2.35	1.57
Enhancement of Wetlands Inside Geotechnical Limits Adjacent to US Highway 2 (MDT/USFS)	13.22	3:1	4.41	13.22	4.41	6.36	2.12	6.77	2.26
Upland Buffer[a]	8.50	5:1	1.70	12.39	2.48	4.85	0.97	6.65	1.33
Project Impacts	-0.08	None	–0.08	-0.08	-0.08	–0.08	–0.08	–0.08	–0.08
Open Water[b]	N/A	TBD[(b)]	N/A	--	--	6.47	TBD[(b)]	5.81	TBD[(b)]
Total Mitigation Acreage	**34.01**		**17.24**	**51.42**	**31.54**	**44.62**	**29.25**	**44.94**	**28.52**

[a] Acreage includes 50-foot buffer around wetlands within MDT and USFS property and outside of the riparian buffer.
[b] Mitigation ratios and crediting for Open Water are To Be Determined (TBD).

Functional Unit Crediting Summary – The 2023 functional units are summarized in Table 9. A total of 250.97 functional units were generated at the Schrieber Meadows site after applying the appropriate mitigation ratios to the 2023 wetland acreage and multiplying that value by the points generated from each the three MWAM assessment areas.

Table 9. Functional Unit Crediting Summary for Schrieber Meadows

Mitigation Type	2023 Delineated Acreage	Ratio	2023 Mitigation Credit Acres	MWAM Actual Points	Functional Units
Creation – USFS/MDT Property	23.44	1:1	23.44	9.3	217.99
Restoration on USFS/MDT Property	2.35	1.5:1	1.57	8.2	12.87
Enhancement of Wetlands Inside Geotechnical Limits Adjacent to US Highway 2 (MDT/USFS)	6.67	3:1	2.26	8.9	20.11
Upland Buffer	6.65	5:1	1.33	TBD	–
Open Water	5.81	TBD	TBD	TBD	–
Functional Units (Mitigation Credit Acres × Actual Points)					**250.97**

Maps, Plans, Photos

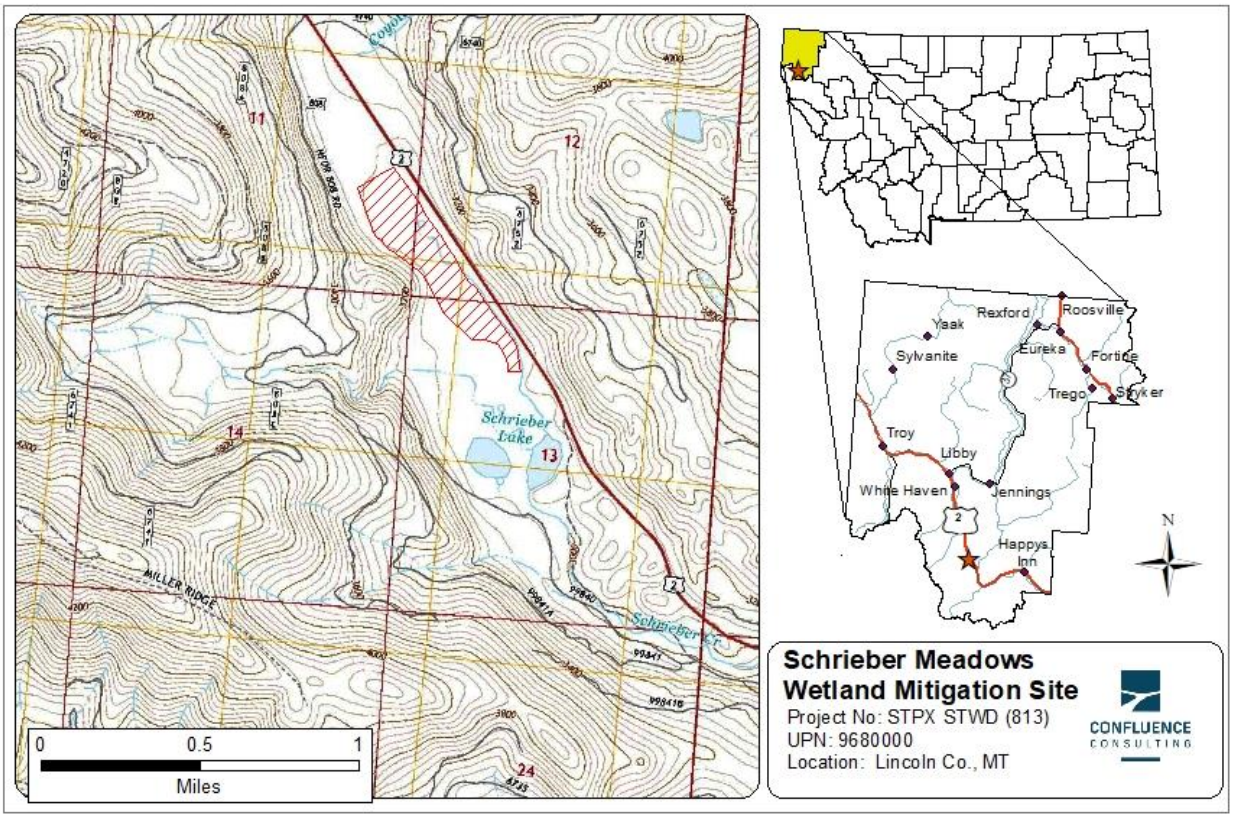


Figure 1. Site Location Map

Project Area Maps/Figures: See Appendix A (Figure A-2 – 2023 Monitoring Activity Locations; Figure A-3 – 2023 Mapped Site Features; Figure A-4 – 2023 Wetland Delineation)

Data Forms: See Appendix B (Site Monitoring form, USACE data forms, MWAM forms, and plant list)

Photos: See Appendix C

Plans: See Appendix D of 2012 Schrieber Meadows Wetland Monitoring Report found at this website link: **https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx**

Conclusions

Based on the results of the thirteenth year of monitoring, the mitigation site is continuing to develop into a diverse wetland ecosystem and is exceeding mitigation credit expectations. The site is meeting all performance standards except for the following:

1. Riparian Buffer Success: Woody and riparian vegetation is established.
   a. Woody vegetation along the reconstructed stream channels has been slow to develop due to perennial deepwater conditions and aggressive competition from RCG.

2. Planted trees and shrubs will be considered successful when they exhibit 50 percent survival after 5 years.
   a. Woody plant survival is not expected to meet this performance standard.

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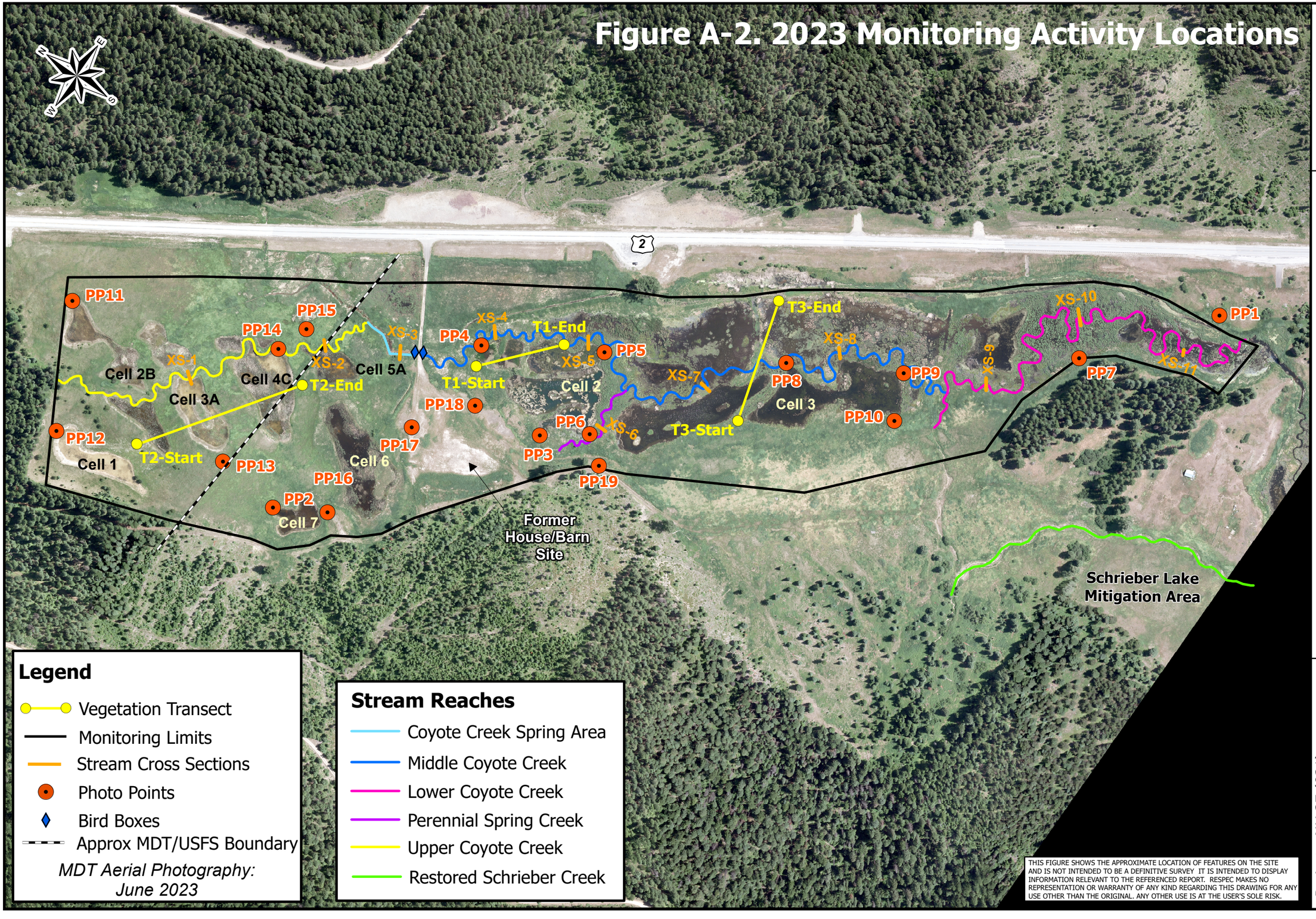
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APPENDIX A
PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring
Schrieber Meadows
Lincoln County, Montana

Figure A-2. 2023 Monitoring Activity Locations



Legend

- Vegetation Transect
- Monitoring Limits
- Stream Cross Sections
- Photo Points
- Bird Boxes
- Approx MDT/USFS Boundary

MDT Aerial Photography: June 2023

Stream Reaches

- Coyote Creek Spring Area
- Middle Coyote Creek
- Lower Coyote Creek
- Perennial Spring Creek
- Upper Coyote Creek
- Restored Schrieber Creek

CONFLUENCE CONSULTING

Schrieber Meadows Mitigation Site
2023 Monitoring Activity Locations

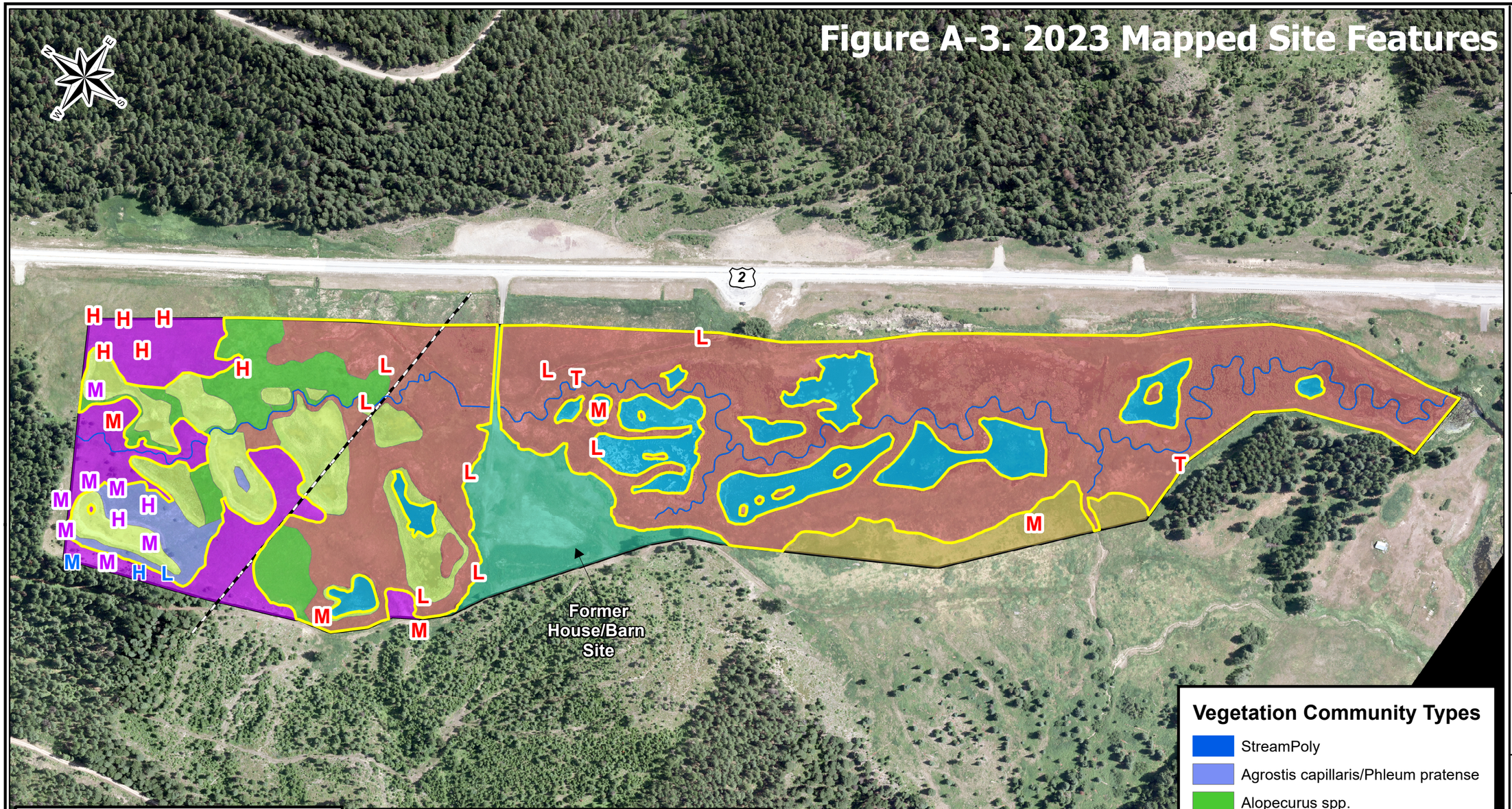
0 125 250 500 750 1,000 1,250 Feet

Project: NH 27 (021)
Location: Lincoln Co., Montana
Map Creation Date: Nov. 2023
Project Manager: R McEldowney
Drawn By: JT

File: X:\Project\MDT Wetland Mitigation 2\Mains\Schrieber Meadows\2023\Monitor2023_MDT.mxd

THIS FIGURE SHOWS THE APPROXIMATE LOCATION OF FEATURES ON THE SITE AND IS NOT INTENDED TO BE A DEFINITIVE SURVEY IT IS INTENDED TO DISPLAY INFORMATION RELEVANT TO THE REFERENCED REPORT. RESPEC MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THIS DRAWING FOR ANY USE OTHER THAN THE ORIGINAL. ANY OTHER USE IS AT THE USER'S SOLE RISK.

Figure A-3. 2023 Mapped Site Features



Legend

- Monitoring Limits
- Wetland Limits
- Open Water
- WUS (Stream Channel)
- Approx MDT/USFS Boundary

MDT Aerial Photography: June 2023

Acreages

Project Area	56.95 acres
Total Wetlands and WUS	45.84 acres
Wetlands*	39.69 acres
WUS (Open Water)	5.81 acres
WUS (Stream Channel)	0.34 acres
Uplands	11.11 acres

*Wetland acreage includes 7.13 acres of Riparian Stream Buffer

Noxious Weeds

Cirsium arvense
Hieracium aurantiacum
Leucanthemum vulgare

Cover Class
- T = Trace (<1% cover)
- L = Low (1-5% cover)
- M = Moderate (6-25% cover)
- H = High (26-100% cover)

Vegetation Community Types

- StreamPoly
- Agrostis capillaris/Phleum pratense
- Alopecurus spp.
- Bromus inermis
- Bromus inermis/Alopecurus spp
- Elymus repens/Pascopyrum smithii
- Phalaris arundinacea
- Typha latifolia/Eleocharis palustris

THIS FIGURE SHOWS THE APPROXIMATE LOCATION OF FEATURES ON THE SITE AND IS NOT INTENDED TO BE A DEFINITIVE SURVEY. IT IS INTENDED TO DISPLAY INFORMATION RELEVANT TO THE REFERENCED REPORT. RESPEC MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THIS DRAWING FOR ANY USE OTHER THAN THE ORIGINAL. ANY OTHER USE IS AT THE USER'S SOLE RISK.

CONFLUENCE CONSULTING

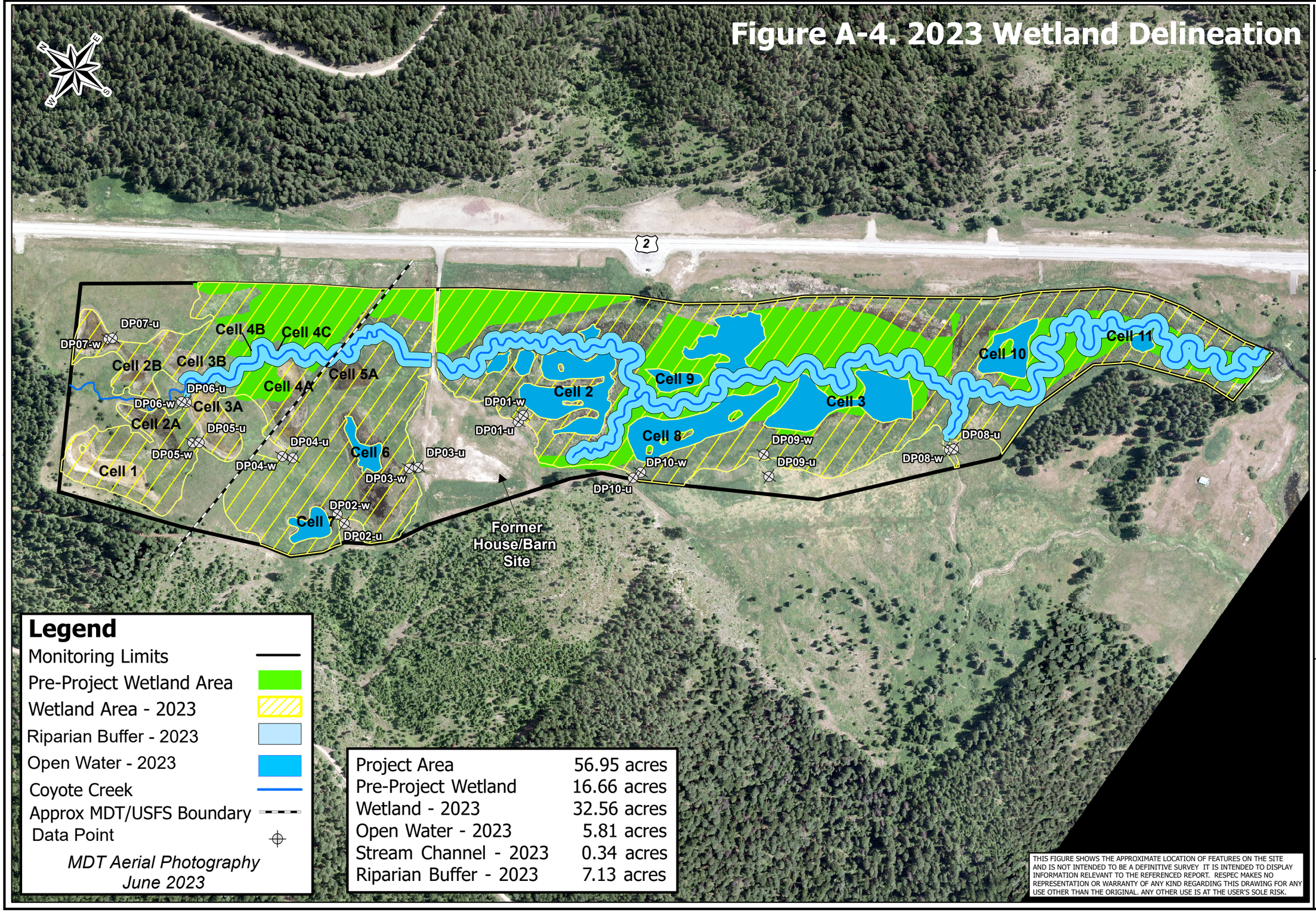
Schrieber Meadows Mitigation Site
2023 Mapped Site Features

0 150 300 600 900 1,200 Feet

Project: NH 27 (021)
Location: Lincoln Co., Montana
Date Map Created: Nov. 2023
Project Manager: R McEldowney
Drawn By: JT

File: X:\Project\MDT Wetland Mitigation 2\Mains\Schrieber Meadows\2023\Veg2023_MDT.mxd

Figure A-4. 2023 Wetland Delineation



Legend

- Monitoring Limits
- Pre-Project Wetland Area
- Wetland Area - 2023
- Riparian Buffer - 2023
- Open Water - 2023
- Coyote Creek
- Approx MDT/USFS Boundary
- Data Point

MDT Aerial Photography
June 2023

Project Area	56.95 acres
Pre-Project Wetland	16.66 acres
Wetland - 2023	32.56 acres
Open Water - 2023	5.81 acres
Stream Channel - 2023	0.34 acres
Riparian Buffer - 2023	7.13 acres

THIS FIGURE SHOWS THE APPROXIMATE LOCATION OF FEATURES ON THE SITE AND IS NOT INTENDED TO BE A DEFINITIVE SURVEY IT IS INTENDED TO DISPLAY INFORMATION RELEVANT TO THE REFERENCED REPORT. RESPEC MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THIS DRAWING FOR ANY USE OTHER THAN THE ORIGINAL. ANY OTHER USE IS AT THE USER'S SOLE RISK.

CONFLUENCE CONSULTING

Schrieber Meadows Mitigation Site
2023 Wetland Delineation

0 150 300 600 900 1,200 Feet

Project: NH 27 (021)
Location: Lincoln Co., Montana
Date Map Created: Nov. 2023
Project Manager: R McEldowney
Drawn By: JT

File: X:\Project\MDT Wetland Mitigation 2\Mains\Schrieber Meadows\2023\Delin2023_MDT.mxd

APPENDIX B
MONITORING FORMS

MDT Wetland Mitigation Monitoring
Schrieber Meadows
Lincoln County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Schrieber Meadows Assessment Date/Time 7/11/2023

Person(s) conducting the assessment: J Trilling, S Weyant, M Hickey, K Lauver

Weather: 75 degrees, partly cloudy, clear Location: Highway 2, Swamp Creek East

MDT District: Missoula Milepost: 53.5

Legal Description: T 27N R 30W Section(s) 11, 12, 13

Initial Evaluation Date: 8/29/2010 Monitoring Year: 13 #Visits in Year: 1

Size of Evaluation Area: 57 (acres)

Land use surrounding wetland:

US Highway 2, US Forest Service, forested watershed

HYDROLOGY

Surface Water Source: Coyote Creek spring, Precipitation, Groundwater

Inundation: ☑ Average Depth: 1.5 **(ft)** Range of Depths: 0-5 **(ft)**

Percent of assessment area under inundation: 65 %

Depth at emergent vegetation-open water boundary: 2 **(ft)**

If assessment area is not inundated then are the soils saturated within 12 inches of surface: Yes

Other evidence of hydrology on the site (ex. – drift lines, erosion, stained vegetation, etc**:**

Surface water, saturation, high water table, oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test.

Groundwater Monitoring Wells

Record depth of water surface below ground surface, in feet.

Additional Activities Checklist:

☑ Map emergent vegetation-open water boundary on aerial photograph.

☑ Observe extent of surface water during each site visit and look for evidence of past surface water elevations (drift lines, erosion, vegetation staining, etc.)

☐ Use GPS to survey groundwater monitoring well locations, if present.

Hydrology Notes:

Water depths in 2023 were very similar to 2022 in the southern 2/3 of the site, where excavated depressions and surrounding area had water depths ranging from 2-4 feet. Cells in the northern 1/3 of the site had lower water depths than 2022, ranging from 0 to 1 feet. Region has been a prolonged drought since late 2022.

VEGETATION COMMUNITIES

Site Schrieber Meadows

(Cover Class Codes **0** = < 1%, **1** = 1-5%, **2** = 6-10%, **3** = 11-20%, **4** = 21-50% , **5** = >50%)

Community # 3 **Community Type:** Phalaris arundinacea / **Acres:** 30.19

Species	Cover class	Species	Cover class
Alnus incana	0	Alopecurus arundinaceus	1
Alopecurus pratensis	1	Bare Ground	0
Calamagrostis canadensis	1	Carex athrostachya	1
Carex lasiocarpa	0	Carex nebrascensis	1
Carex stipata	1	Carex utriculata	1
Cirsium arvense	1	Eleocharis palustris	1
Epilobium brachycarpum	0	Epilobium ciliatum	1
Glyceria grandis	0	Juncus tenuis	0
Lemna minor	1	Mimulus guttatus	1
Open Water	3	Persicaria amphibia	1
Phalaris arundinacea	5	Scirpus microcarpus	1

Comments:

Dominant wetland community type observed across the site. Water depths within the CT were 0.5-3 feet south of the access road and 0-1 foot in the north of the road. Since water levels have increased in 2019, reed canary grass has been expanding outwards due to higher groundwater levels. However, in 2023 within the perennially inundated areas where reed canary grass has been observed braking up into floating mats in the past, more Carex spp. and other Obligate species were observed replacing the once dominant reed canary grass.

Community # 5 **Community Type:** Aquatic macrophytes / Open Water **Acres:** 5.81

Species	Cover class	Species	Cover class
Algae, brown	2	Algae, green	2
Alnus incana	0	Aquatic macrophytes	2
Carex athrostachya	0	Carex nebrascensis	0
Carex utriculata	0	Chara sp.	2
Eleocharis palustris	0	Epilobium brachycarpum	0
Glyceria grandis	0	Lemna minor	0
Mimulus guttatus	0	Open Water	5
Persicaria amphibia	1	Phalaris arundinacea	1
Sparganium natans	0	Typha latifolia	1

Comments:

Areas dominated by an average of 2-5 feet of standing water, less than 5% emergent wetland vegetation, and a diversity of submergent/floating aquatic macrophytes. Open water acreage decreased slightly from 2022 due to more Obligate plant species taking root where reed canary grass was drowned out since the water levels rose in 2019.

Community # 8 **Community Type:** Elymus repens / Pascopyrum smithii **Acres:** 3.9

Species	Cover class	Species	Cover class
Achillea millefolium	1	Alopecurus pratensis	1
Bare Ground	4	Bromus briziformis	1
Bromus inermis	1	Bromus tectorum	2
Descurainia pinnata	1	Elymus repens	2
Elymus trachycaulus	2	Fragaria virginiana	0
Medicago lupulina	2	Pascopyrum smithii	2
Sisymbrium altissimum	1	Verbascum thapsus	1

Comments:

Upland community type that runs along the access road that bisects the property. This community appears to have been seeded with a native grass seed mix but also contains some non-native forbs.

Community # 14 **Community Type:** Agrostis capillaris / Phleum pratense **Acres:** 1.23

Species	Cover class	Species	Cover class
Agrostis capillaris	4	Agrostis stolonifera	1
Alopecurus pratensis	1	Bare Ground	1
Bromus inermis	2	Carex athrostachya	1
Cirsium arvense	0	Dactylis glomerata	0
Equisetum arvense	0	Equisetum arvense	0
Festuca rubra	1	Hieracium aurantiacum	0
Juncus confusus	1	Juncus tenuis	1
Leucanthemum vulgare	2	Phalaris arundinacea	2
Phleum pratense	2	Picea engelmannii	0
Pinus contorta	0	Pinus ponderosa	0
Populus balsamifera	0	Pseudotsuga menziesii	0
Rosa woodsii	0	Symphyotrichum spathulatum	0

Comments:

Wetland community type located in northwest corner of site. This CT decreased in size in 2023 due a decrease in wetlands in this area, likely due to the drought in the region.

Community # 15 **Community Type:** Typha latifolia / Eleocharis palustris **Acres:** 5.41

Species	Cover class	Species	Cover class
Achillea millefolium	0	Agrostis capillaris	1
Alisma triviale	1	Alnus incana	0
Alopecurus arundinaceus	1	Alopecurus pratensis	1
Bare Ground	1	Beckmannia syzigachne	0
Carex aquatilis	1	Carex athrostachya	1
Carex bebbii	0	Carex nebrascensis	0
Carex pellita	1	Carex stipata	1
Carex vesicaria	1	Chara sp.	1
Eleocharis palustris	2	Epilobium ciliatum	1
Glyceria grandis	1	Glyceria striata	1
Juncus bufonius	0	Juncus confusus	1
Juncus nodosus	1	Juncus tenuis	0
Leucanthemum vulgare	1	Mentha arvensis	1
Open Water	3	Persicaria amphibia	1
Phalaris arundinacea	1	Polypogon monspeliensis	0
Populus balsamifera	1	Potamogeton natans	1
Salix bebbiana	0	Scirpus cyperinus	0
Scirpus microcarpus	1	Trifolium pratense	1
Typha latifolia	4	Veronica scutellata	1

Comments:

Located northwest of access road that bisects the property in excavated depressions. Surface water depths ranged from 0-1 feet in 2023. This area was noticeably drier in 2023 than in 2022. Many of the excavated cells were completely dry during the 2023 site visit. Volunteer Populus balsamifera and Alnus incana seedlings observed around margins of depressions and this CT.

Community # 16 **Community Type:** Alopecurus spp. / **Acres:** 3.13

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	5	Alopecurus pratensis	2
Arnica chamissonis	1	Bromus inermis	1
Carex athrostachya	1	Cirsium arvense	1
Elymus lanceolatus	1	Elymus repens	2
Phalaris arundinacea	1	Potentilla gracilis	1
Senecio hydrophiloides	1	Stellaria longipes	0

Comments:

This is a new CT in 2022 created in the northern portion of the project area in areas that were newly classified as wetlands in 2022. These areas were formerly CT 9, a similar upland community, but lacked a significant Bromus inermis component.

Community # 17 **Community Type:** Bromus inermis / **Acres:** 5.06

Species	Cover class	Species	Cover class
Achillea millefolium	1	Agropyron trachycaulum	2
Agrostis capillaris	2	Alopecurus arundinaceus	2
Alopecurus pratensis	3	Arnica chamissonis	1
Bare Ground	0	Bromus carinatus	1
Bromus inermis	5	Cirsium arvense	1
Dactylis glomerata	1	Elymus repens	1
Mahonia repens	0	Penstemon confertus	1
Phalaris arundinacea	1	Phleum pratense	1
Poa pratensis	1	Senecio hydrophiloides	1
Taraxacum officinale	1		

Comments:

New upland community created in 2023 that largely replaced the Alopecurus spp./Bromus inermis CT. This CT is located in the northern portions of the project area where the area has repeatedly transitioned from wetlands to uplands and back again.

Community # 18 **Community Type:** Bromus inermis / Alopecurus spp. **Acres:** 2.14

Species	Cover class	Species	Cover class
Agrostis capillaris	0	Alopecurus arundinaceus	2
Alopecurus pratensis	2	Bromus inermis	3
Carex microptera	1	Cirsium arvense	1
Elymus lanceolatus	2	Elymus repens	1
Phalaris arundinacea	2	Phleum pratense	0
Poa pratensis	2		

Comments:

This community type created in 2023 to characterize vegetation in the uplands located in the southwest portion of the site which are significantly different than the uplands at the northern portion of the site.

Total Vegetation Community Acreage **56.87**

VEGETATION TRANSECTS

Site: Schrieber Meadows Date: 7/11/2023

Transect Number: 1 **Compass Direction from Start:** 112

Interval Data:

Ending Station 18 Community Type: Phalaris arundinacea /

Species	Cover class	Species	Cover class
Epilobium brachycarpum	1	Persicaria amphibia	1
Phalaris arundinacea	5		

Ending Station 55 Community Type: Aquatic macrophytes / Open Water

Species	Cover class	Species	Cover class
Algae, green	1	Alnus incana	0
Epilobium brachycarpum	1	Lemna minor	0
Mimulus guttatus	0	Open Water	5
Persicaria amphibia	1	Phalaris arundinacea	1

Ending Station 80 Community Type: Phalaris arundinacea /

Species	Cover class	Species	Cover class
Cirsium arvense	2	Epilobium brachycarpum	1
Mimulus guttatus	1	Open Water	4
Phalaris arundinacea	5		

Ending Station 155 Community Type: Aquatic macrophytes / Open Water

Species	Cover class	Species	Cover class
Algae, brown	1	Aquatic macrophytes	4
Lemna minor	0	Open Water	5
Persicaria amphibia	1		

Ending Station 188 Community Type: Phalaris arundinacea /

Species	Cover class	Species	Cover class
Alnus incana	1	Carex aquatilis	2
Lemna minor	1	Mimulus guttatus	1
Open Water	3	Persicaria amphibia	1
Phalaris arundinacea	5		

Ending Station 215 Community Type: Aquatic macrophytes / Open Water

Species	Cover class	Species	Cover class
Algae, brown	0	Algae, green	1
Aquatic macrophytes	2	Carex vesicaria	2
Epilobium brachycarpum	1	Lemna minor	1
Mimulus guttatus	1	Open Water	5
Persicaria amphibia	1	Phalaris arundinacea	1

Ending Station 318 Community Type: Phalaris arundinacea /

Species	Cover class	Species	Cover class
Epilobium brachycarpum	1	Glyceria grandis	1
Open Water	3	Phalaris arundinacea	5
Sparganium natans	1	Typha latifolia	1

Transect Notes:

Open water covered most of the surface area in 2023 as it did in 2022. Water depths were similar to 2022 and ranged from 0.5 to 5 feet.

Transect Number: 2 **Compass Direction from Start:** 100

Interval Data:

Ending Station 35 Community Type: Agrostis capillaris / Phleum pratense

Species	Cover class	Species	Cover class
Agrostis capillaris	5	Antennaria microphylla	0
Bare Ground	0	Bromus inermis	1
Carex microptera	2	cerastium sp.	1
Equisetum arvense	1	Juncus confusus	1
Juncus tenuis	2	Leucanthemum vulgare	2
Phleum pratense	1	Prunella vulgaris	1
Schedonorus pratensis	0		

Ending Station 105 Community Type: Typha latifolia / Eleocharis palustris

Species	Cover class	Species	Cover class
Agrostis stolonifera	0	Carex nebrascensis	1
Carex pellita	3	Carex vesicaria	2
Eleocharis palustris	1	Glyceria grandis	0
Juncus ensifolius	1	Juncus tenuis	1
Open Water	3	Phalaris arundinacea	1
Scirpus microcarpus	1	Typha latifolia	4

Ending Station 168 Community Type: Alopecurus pratensis /

Species	Cover class	Species	Cover class
Agrostis stolonifera	2	Alopecurus pratensis	3
Arnica chamissonis	1	Bromus inermis	0
Carex microptera	2	Carex nebrascensis	0
Carex vesicaria	4	Epilobium ciliatum	1
Equisetum arvense	0	Leucanthemum vulgare	0
Phalaris arundinacea	1		

Ending Station 219 Community Type: Typha latifolia / Eleocharis palustris

Species	Cover class	Species	Cover class
Achillea millefolium	0	Agrostis capillaris	1
Alopecurus pratensis	1	Bare Ground	3
Carex nebrascensis	1	Eleocharis palustris	2
Epilobium ciliatum	0	Gnaphalium palustre	0
Juncus tenuis	1	Leucanthemum vulgare	0
Phalaris arundinacea	1	Polypogon monspeliensis	0
Populus balsamifera	0	Typha latifolia	4

Ending Station 250 Community Type: Agrostis capillaris / Phleum pratense

Species	Cover class	Species	Cover class
Agrostis capillaris	2	Bare Ground	2
Bromus inermis	4	Carex microptera	1
Fragaria virginiana	0	Leucanthemum vulgare	1
Penstemon confertus	1		

Ending Station 295 Community Type: Typha latifolia / Eleocharis palustris

Species	Cover class	Species	Cover class
Achillea millefolium	0	Agrostis capillaris	0
Alopecurus arundinaceus	1	Bare Ground	2
Beckmannia syzigachne	2	Carex atherodes	0
Carex nebrascensis	1	Eleocharis palustris	3
Epilobium ciliatum	0	Gnaphalium palustre	1
Juncus tenuis	1	Leucanthemum vulgare	0
Phalaris arundinacea	1	Populus balsamifera	1
Rosa woodsii	1	Typha latifolia	4

Ending Station 410 Community Type: Bromus inermis /

Species	Cover class	Species	Cover class
Agrostis capillaris	1	Alopecurus pratensis	3
Arnica chamissonis	0	Bare Ground	0
Bromus inermis	5	Carex microptera	1
Cerastium fontanum	0	Equisetum arvense	1
Geum macrophyllum	0	Gnaphalium palustre	0
Leucanthemum vulgare	0	Penstemon confertus	1
Potentilla gracilis	1	Rosa woodsii	0

Ending Station 562 Community Type: Typha latifolia / Eleocharis palustris

Species	Cover class	Species	Cover class
Agrostis capillaris	1	Alisma gramineum	1
Alnus incana	0	Alopecurus pratensis	0
Carex aquatilis	1	Carex nebrascensis	0
Eleocharis palustris	2	Juncus nodosus	1
Open Water	2	Persicaria amphibia	1
Phalaris arundinacea	1	Phalaris arundinacea	1
Salix bebbiana	0	Scirpus microcarpus	2
Typha latifolia	4		

Ending Station 594 Community Type: Phalaris arundinacea /

Species	Cover class	Species	Cover class
Alopecurus pratensis	2	Carex vesicaria	1
Cirsium arvense	0	Persicaria amphibia	1
Phalaris arundinacea	5	Scirpus microcarpus	2

Transect Notes:

0-1 feet of water observed in cells in 2023, a significant decrease since 2022. Populus balsamifera volunteer seedlings observed growing around margins of CT 15 along transect. The weed ox-eye daisy increased in cover along this transect in 2023 continuing a trend observed in 2022.

Transect Number: 3 **Compass Direction from Start:** 45

Interval Data:

Ending Station 57 Community Type: Phalaris arundinacea /

Species	Cover class	Species	Cover class
Epilobium ciliatum	2	Lemna minor	0
Open Water	2	Persicaria amphibia	2
Phalaris arundinacea	5	Sparganium natans	1

Ending Station 150 Community Type: Aquatic macrophytes / Open Water

Species	Cover class	Species	Cover class
Aquatic macrophytes	3	Lemna minor	0
Open Water	5	Persicaria amphibia	0

Ending Station 440 Community Type: Phalaris arundinacea /

Species	Cover class	Species	Cover class
Algae, brown	1	Carex utriculata	1
Carex vesicaria	3	Eleocharis palustris	1
Epilobium ciliatum	1	Lemna minor	1
Open Water	4	Persicaria amphibia	2
Phalaris arundinacea	4	Typha latifolia	1

Transect Notes:

Open water decreased in 2023 as more Carex spp. and reed canary grass encroach in the open water areas within the southern portion of the site.

PLANTED WOODY VEGETATION SURVIVAL

Schrieber Meadows

Planting Type	#Planted	#Alive	Notes
Alnus incana	1000	37	too wet, stunted, poor vigor, out-competed by reed canary grass
Salix sp.	750	0	too wet and out-competed by reed canary grass

Comments

Planted shrubs are difficult to see at the site due to the dense cover of tall reed canary grass. It is thought that the majority of woody plantings have died because of perennial deep water conditions and aggressive competition from reed canary grass. Volunteer Populus balsamifera and Alnus incana seedlings observed around margins of excavated depressions in northern 1/3 of site. In addition, volunteer Rosa Woodsii has been observed within upland areas at the site.

Schrieber Meadows

WILDLIFE

Birds

Were man-made nesting structures installed? Yes

If yes, type of structure: Bird boxes

How many? 2

Are the nesting structures being used? Yes

Do the nesting structures need repairs? No

Nesting Structure Comments:

The observed nesting structures appeared to have been occupied in 2023.

Species	#Observed	Behavior	Habitat
American Wigeon	9		
Belted Kingfisher	2		
Canada Goose	5		
Common Yellowthroat	6		
Eastern Kingbird	2		
Mallard	11		
Marsh Wren	1		
Northern Rough-winged Sw	2		
Red-tailed Hawk	1		
Red-winged Blackbird	28		
Sandhill Crane	2		
Song Sparrow	2		
Tree Swallow	15		
Turkey Vulture	1		
Wilson's Snipe	2		

Bird Comments

A diversity of bird species were observed at the site in 2023.

BEHAVIOR CODES

BP = One of a breeding pair **BD** = Breeding display **F** = Foraging **FO** = Flyover **L** = Loafing **N** = Nesting

HABITAT CODES

AB = Aquatic bed **SS** = Scrub/Shrub **FO** = Forested **UP** = Upland buffer **I** = Island

WM = Wet meadow **MA** = Marsh **US** = Unconsolidated shore **MF** = Mud Flat **OW** = Open Water

Mammals and Herptiles

Species	# Observed	Tracks	Scat	Burrows	Comments
Brook Trout	5	No	No	No	
Columbia Spotted Frog	1	No	No	No	
Elk	1	No	No	No	Carcass
Garter Snake	10	No	No	No	
Muskrat	1	No	No	No	
Pumpkinseed	10	No	No	No	
Smallmouth Bass	5	No	No	No	
Turtle sp.	1	No	No	No	
White-tailed Deer	2	Yes	Yes	No	

Wildlife Comments:

Many fish observed in Cell 3.

Schrieber Meadows

PHOTOGRAPHS

Take photographs of the following permanent reference points listed in the check list below. Record the direction of the photograph using a compass. When at the site for the first time, establish a permanent reference point by setting a ½ inch rebar or fencepost extending 2-3 feet above ground. Survey the location with a resource grade GPS and mark the location on the aerial photograph.

Photograph Checklist:

☑ One photograph for each of the four cardinal directions surrounding the wetland.

☑ At least one photograph showing upland use surrounding the wetland. If more than one upland exists then take additional photographs.

☑ At least one photograph showing the buffer surrounding the wetland.

☑ One photograph from each end of the vegetation transect, showing the transect.

Photo #	Latitude	Longitude	Bearing	Description
DP01-u	48.1125823254	-115.417550066		
DP01-w	48.112584655	-115.417438634		
DP02-u	48.1132301194	-115.42015072		
DP02-w	48.1133340264	-115.420111783		
DP03-u	48.1130301227	-115.418907051		
DP03-w	48.1130890101	-115.418996734		
DP04-u	48.11404692	-115.419994707		
DP04-w	48.113978876	-115.419901002		
DP05-u	48.1147371344	-115.420556764		
DP05-w	48.1147831875	-115.420613418		
DP06-u	48.1151017847	-115.420274777		
DP06-w	48.1150613191	-115.420238238		
DP07-u	48.1159647222	-115.420201616		
DP07-w	48.1159903214	-115.420243422		
DP08-u	48.1093173106	-115.414039889		
DP08-w	48.1093423691	-115.414084678		
DP09-u	48.110474359	-115.415943172		
DP09-w	48.1106403628	-115.415751571		
DP10-u	48.1114356039	-115.417146628		
DP10-w	48.1114136797	-115.417016634		
PP01	48.10804	-115.410172	270	Photo Point 1 (Pano):
PP02	48.113735	-115.420509	150	Photo Point 2:
PP03	48.112183	-115.417503	90	Photo Point 3 (Pano):
PP04	48.113213	-115.416832	180	Photo Point 4 (Pano):
PP05	48.112614	-115.415977	300	Photo Point 5 (Pano):
PP06	48.11904	-115.417023	0	Photo Point 6 (Pano):
PP07	48.108813	-115.411923	0	Photo Point 7 (Pano):

PP08	48.11121	-115.414238	190	Photo Point 8 (Pano):
PP09	48.109997	-115.413765	280	Photo Point 9 (Pano):
PP10	48.109737	-115.414024	0	Photo Point 10 (Pano):
PP11	48.116409	-115.420021	190	Photo Point 11 (Pano):
PP12	48.115673	-115.421562	180	Photo Point 12 (Pano):
PP13	48.11422	-115.420403	280	Photo Point 13 (Pano):
PP14	48.114655	-115.41893	230	Photo Point 14 (Pano):
PP15	48.114323	-115.418449	180	Photo Point 15 (Pano):
PP16	48.113403	-115.420128	70	Photo Point 16 (Pano):
PP17	48.112938	-115.418388	270	Photo Point 17 (Pano):
PP18	48.1129	-115.417618	90	Photo Point 18:
PP19	48.111553	-115.417084	10	Photo Point 19, Photo 1:
PP-19	48.111553	-115.417084	100	Photo Point 19, Photo 2:
PP-20	48.109493	-115.413918	100	Photo Point 20:
T-1 end	48.112663	-115.41642	295	Transect 1 end:
T-1 start	48.115204	-115.417503	115	Transect 1 start:
T-2 end	48.114197	-115.418991	280	Transect 2 end:
T-2 start	48.115204	-115.421013	100	Transect 2 start:
T-3 end	48.111187	-115.413849	225	Transect 3 end:
T-3 start	48.111134	-115.415642	45	Transect 3 start:

Comments:

Schrieber Meadows

ADDITIONAL ITEMS CHECKLIST

Hydrology

☑ Map emergent vegetation/open water boundary on aerial photos.
☑ Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift lines, vegetation staining, erosion, etc).

Photos

☑ One photo from the wetland toward each of the four cardinal directions
☑ One photo showing upland use surrounding the wetland.
☑ One photo showing the buffer around the wetland
☑ One photo from each end of each vegetation transect, toward the transect

Vegetation

☑ Map vegetation community boundaries

☑ Complete Vegetation Transects

Soils

☑ Assess soils

Wetland Delineations

☑ Delineate wetlands according to applicable USACE protocol (1987 form or Supplement)
☑ Delineate wetland – upland boundary onto aerial photograph.

Wetland Delineation Comments

A total of 45.84 acres of jurisdictional wetland and waters of the US (WUS) were delineated at the Schrieber Meadows site in 2023. The total creditable wetland acreage delineated in 2023, was 32.56 acres, which is a decrease of 1.87 acres since 2022. WUS (Open Water) was 5.81 acres in 2023, 0.66 acres less than 2022.

Functional Assessments

☑ Complete and attach full MDT Montana Wetland Assessment Method field forms.

Functional Assessment Comments:

All 3 AA's Category I wetlands.

Maintenance

Were man-made nesting structure installed at this site? Yes

If yes, do they need to be repaired? No

If yes, describe the problems below and indicate if any actions were taken to remedy the problems

Were man-made structures built or installed to impound water or control water flow

into or out of the wetland? No

If yes, are the structures in need of repair?

If yes, describe the problems below.

No maintenance needs were observed in 2023.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP01U

Investigator(s): J Trilling Section, Township, Range: S12 T27N R30W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 5

Subregion (LRR): E 43A Lat: 48.1125454 Long: -115.4175765 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located at west end of wetland cell 2.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Pascopyrum smithii	25	✔	FACU
2. Alopecurus arundinaceus	15	✔	FAC
3. Elymus repens	15	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 45

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	55 (A)		190 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

Although this point contains marginal hydrophytic vegetation, it lacks hydric soils and wetland hydrology.

SOIL

Sampling Point: DP01U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/2	100					Loam	cobbles
-								
-								
-								
-								
-								
-								
-								

[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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Cobbles

Depth (inches): 8

Hydric Soil Present? Yes _____ No ✔

Remarks:

No evidence of hydric soils observed as sampling pit could only get to a depth of 8" due to cobbles in the substrate.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP01W

Investigator(s): J Trilling Section, Township, Range: S12 T27N R30W

Landform (hillslope, terrace, etc.): Fringe Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): E 43A Lat: 48.112362 Long: -115.4174249 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located at west end of wetland cell 2.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	35	✔	FACW
2. Carex athrostachya	15	✔	FACW
3. Persicaria amphibia	3		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	53 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 47

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	53 (A)		103 (B)

Prevalence Index = B/A = 1.94

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

Aquatic moss layer makes up large portion of bare ground. Positive dominance and rapid tests, as well as a prevalence index below three, indicate a hydrophytic vegetation community at this point.

SOIL

Sampling Point: DP01W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 2							Sandy Loam	root mat
2 - 8	N 5/0	100					Sandy Loam	cobbles
-								
-								
-								
-								
-								
-								

[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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: cobbles

Depth (inches): 8

Hydric Soil Present? Yes ✔ No ___

Remarks:

A loamy gleyed matrix indicates hydric soils in this profile, considering sampling pit could only get to a depth of 8" due to cobbles in the substrate.

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 Vis ble 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 along 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 (2 or more 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): 6

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

A water table at a depth of 6 inches, saturation to the surface, the point's geomorphic position, and a positive FAC-neutral test provide evidence of wetland hydrology at this data point.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP02U

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Mound Local relief (concave, convex, none): Linear Slope (%): 5

Subregion (LRR): E 43A Lat: 48.1132233 Long: -115.4201856 Datum: WGS 84

Soil Map Unit Name: 108 - Andic Dystric Eutrochrepts, lacustrine terraces-Andic Dystrochrepts, glacial outwash terraces, complex NWI classification: Not mapped

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:

Upland sample point located at southeast end of wetland cell 7.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Agropyron intermedium	35	✔	UPL
2. Alopecurus arundinaceus	15	✔	FAC
3. Penstemon confertus	5		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 45

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: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	40	x 5 =	200
Column Totals:	55 (A)		245 (B)

Prevalence Index = B/A = 4.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of a hydrophytic vegetation community observed.

SOIL

Sampling Point: DP02U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/3	100					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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Cobbles

Depth (inches): 12

Hydric Soil Present? Yes _____ No ✔

Remarks:

No evidence of hydric soil observed.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP02W

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Undulating Slope (%): 10

Subregion (LRR): E 43A Lat: 48.1133246 Long: -115.4201413 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained 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:

Wetland sample point located at southeast end of wetland cell 7.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	75	✔	FACW
2. Carex atherodes	10		OBL
3. Carex stipata	8		OBL
4. Alopecurus arundinaceus	3		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	96 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 4

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	18	x 1 =	18
FACW species	75	x 2 =	150
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	96 (A)		177 (B)

Prevalence Index = B/A = 1.84

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

A positive dominance test, positive rapid test, and prevalence index below three indicate the presence of a hydrophytic vegetation community.

SOIL

Sampling Point: DP02W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Loam	
12 - 20	2.5Y 5/2	96	10YR 4/6	4	C	M	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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Prominent redoximorphic concentrations common within the matrix below 12".

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive FAC-neutral test and the geomorphic position of the point provide evidence of wetland hydrology at this data point.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP03U

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Linear Slope (%): 3

Subregion (LRR): E 43A Lat: 48.1130559 Long: -115.4188887 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located to the northwest of former house/barn site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Elymus trachycaulus	98	✔	FAC
2. Sisymbrium loeselii	2		
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	98	x 3 =	294
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	98 (A)		294 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

Although this point contains hydrophytic vegetation, it lacks hydric soils and wetland hydrology.

SOIL

Sampling Point: DP03U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 8	7.5YR 2.5/1	**50**					Loam	Fine roots, large rocks throughout
0 - 8	10YR 4/4	**50**					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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 evidence of hydric soil indicators observed, as sampling pit could only get to a depth of 8" due to cobbles in the substrate. Mixed matrix observed from 0-8"

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP03W

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Open Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): E 43A Lat: 48.1131249 Long: -115.4189937 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located to the northwest of former house/barn site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	65	✔	FACW
2. Equisetum arvense	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		145 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

A positive rapid test, positive dominance test, and a prevalence index below three indicate a hydrophytic vegetation community at this data point.

SOIL

Sampling Point: DP03W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100	/				Loam	
2 - 18	2.5Y 7/1	96	10YR 6/6	4	C		Silt Loam	
18 - 24	10Y 6/1	100	10YR 6/6	5	C		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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Prominent redoximorphic concentrations common within the depleted matrix.

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 Vis ble 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 along 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 (2 or more 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): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Saturation at the soil surface, oxidized rhizospheres along living roots, the geomorphic position of the point, and a positive FAC-neutral test provide evidence of wetland hydrology at this data point.

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

Project/Site: Schreiber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP04U

Investigator(s): M Hickey Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR): E 43A Lat: 48.1140528 Long: -115.4199651 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located to the south of excavated wetland cell 4A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Agropyron intermedium	40	✔	UPL
2. Alopecurus arundinaceus	30	✔	FAC
3. Cirsium arvense	6		FAC
4. Achillea millefolium	4		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

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: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	36	x 3 =	108
FACU species	4	x 4 =	16
UPL species	40	x 5 =	200
Column Totals:	80 (A)		324 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of hydrophytic vegetation observed.

SOIL

Sampling Point: DP04U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 7	10YR 2/2	100					Sandy Loam	many fine roots
7 - 16	10Y 5/2	100					Clay 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 soil indicators observed. Low chroma and high value soils the result of volcanically derived soils.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP04W

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): E 43A Lat: 48.1140036 Long: -115.4199034 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located at the south end of excavated wetland cell 4A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	90	✔	FACW
2. Alopecurus arundinaceus	4		FAC
3. Cirsium arvense	2		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	96 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 4

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	6	x 3 =	18
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	96 (A)		198 (B)

Prevalence Index = B/A = 2.06

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

A positive rapid test, positive dominance test, and a prevalence index below three indicate a hydrophytic vegetation community at this data point.

SOIL

Sampling Point: DP04W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	100					Loam	moist
16 - 20	10YR 7/1	98	7.5YR 6/6	2	C	M	Loam	moist
-								
-								
-								
-								
-								
-								

[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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Prominent redoximorphic concentrations common in the matrix below 16".

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The geomorphic position of the point and a positive FAC-neutral test provide evidence of wetland hydrology at this data point.

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

Project/Site: Schreiber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP05U

Investigator(s): M Hickey Section, Township, Range: S11 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.1146831 Long: -115.4207935 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located between excavated wetland cells 2A and 3A,

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	60	✔	UPL
2. Alopecurus arundinaceus	10		FAC
3. Agrostis capillaris	4		FAC
4. Poa pratensis	3		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	77 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 23

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	17	x 3 =	51
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column Totals:	77 (A)		351 (B)

Prevalence Index = B/A = 4.56

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of hydrophytic vegetation observed.

SOIL

Sampling Point: DP05U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 6/2	97	7.5YR 4/6	3	C	M	Loam	Fine roots throughout
8 - 16	7.5YR 3/1	100					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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Low chroma and high value soils the result of volcanically derived soils. Redoximorphic features likely relict.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP05W

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): E 43A Lat: 48.1148178 Long: -115.4206338 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located between excavated wetland cells 2A and 3A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Alopecurus arundinaceus	30	✔	FAC
2. Carex pellita	15	✔	OBL
3. Phalaris arundinacea	15	✔	FACW
4. Agrostis capillaris	10		FAC
5. Juncus tenuis	2		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	72	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 28

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	15	x 2 =	30
FAC species	42	x 3 =	126
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	72 (A)		171 (B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

A positive dominance test and a prevalence index <3 provides evidence for a hydrophytic vegetation community at this data point.

SOIL

Sampling Point: DP05W

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 - 4	10YR 6/2	80	10YR 6/6	20	C	M	Silt Loam	fine roots
4 - 13	2.5Y 3/1	97	7.5YR 6/6	3	C	M	Sandy Clay Loam	
13 - 18	10YR 7/1	99	7.5YR 6/6	1	C	M	Sandy 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Prominent redoximorphic concentrations common in the depleted matrix.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The geomorphic position of the point and a positive FAC-neutral test provide evidence of wetland hydrology at this data point.

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

Project/Site: Schreiber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP06U

Investigator(s): M Hickey Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear Slope (%): 5

Subregion (LRR): E 43A Lat: 48.1150707 Long: -115.4202439 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped.

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:

Upland sample point located at northwest end of excavated wetland cell 3A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	58	✔	UPL
2. Alopecurus arundinaceus	22	✔	FAC
3. Cirsium arvense	2		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	82 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 12

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: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	24	x 3 =	72
FACU species	0	x 4 =	0
UPL species	58	x 5 =	290
Column Totals:	82 (A)		362 (B)

Prevalence Index = B/A = 4.41

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of a hydrophytic vegetation community observed.

SOIL

Sampling Point: DP06U

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
1 - 9	10YR 4/2	99	10YR 3/4	1	C	M	Loam	Many fine roots
9 - 16	10YR 3/3	99	10YR 3/4	1	C	M	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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Soils dry throughout.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP06W

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): E 43A Lat: 48.1150915 Long: -115.4202522 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland data point located at northwest edge of excavated wetland cell 3A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex nebrascensis	10	✔	OBL
2. Juncus nodosus	5	✔	OBL
3. Phalaris arundinacea	5	✔	FACW
4. Eleocharis palustris	3		OBL
5. Epilobium ciliatum	3		FACW
6. Arnica chamissonis	2		FACW
7. Populus balsamifera	2		FAC
8.			
9.			
10.			
11.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 70

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	18	x 1 =	18
FACW species	10	x 2 =	20
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	30 (A)		44 (B)

Prevalence Index = B/A = 1.47

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

A positive rapid test, positive dominance test, and prevalence index below three indicate a hydrophytic vegetation community at this data point.

SOIL

Sampling Point: DP06W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 7/1	85	10YR 6/6	15	C	M	Sandy Loam	
4 - 18	10YR 6/2	75	7.5YR 6/8	25	C		Sandy 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Common to many prominent redoximorphic concentrations present in the depleted matrix.

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 Vis ble 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 along 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 (2 or more 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): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Snail shells observed in surface. Saturation at the soil surface, aquatic invertebrates, algal mats, oxidized rhizospheres along living roots, the geomorphic position of the point, a positive FAC-neutral test, and visible inundation on aerial imagery all provide evidence of wetland hydrology at this point.

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

Project/Site: Schreiber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP07U

Investigator(s): M Hickey Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Terrace Slope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR): E 43A Lat: 48.1150987 Long: -115.4202513 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located in the northeast portion of the Scrieber Meadows Wetland Mitigation site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	45	✔	UPL
2. Symphyotrichum spathulatum	10		FAC
3. Poa pratensis	7		FAC
4. Carex microptera	5		FACU
5. Taraxacum officinale	4		FACU
6. Agrostis capillaris	3		FAC
7. Fragaria virginiana	3		FACU
8.			
9.			
10.			
11.			
	77 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 23

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (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	12	x 4 =	48
UPL species	45	x 5 =	225
Column Totals:	77 (A)		333 (B)

Prevalence Index = B/A = 4.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of a hydrophytic vegetation community observed.

SOIL

Sampling Point: DP07U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/3	100					Loam	
3 - 16	10YR 3/2	95	7.5YR 4/6	5			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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Redoximorphic features may be relict concentrations.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-12

Applicant/Owner: MDT State: Montana Sampling Point: DP07W

Investigator(s): J Trilling Section, Township, Range: S11 T27N R30W

Landform (hillslope, terrace, etc.): Fringe Local relief (concave, convex, none): Linear Slope (%): 15

Subregion (LRR): E 43A Lat: 48.1159897 Long: -115.4202231 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located in north corner of project area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex nebrascensis	40	✔	OBL
2. Juncus nodosus	25	✔	OBL
3. Leucanthemum vulgare	5		FACU
4. Taraxacum officinale	3		FACU
5. Hieracium aurantiacum	2		UPL
6. Populus balsamifera	2		FAC
7. Pseudotsuga menziesii	1		FACU
8.			
9.			
10.			
11.			
	78 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 22

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	0	x 2 =	0
FAC species	2	x 3 =	6
FACU species	9	x 4 =	36
UPL species	2	x 5 =	10
Column Totals:	78 (A)		117 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

15% of surface is covered in moss. Positive dominance and rapid tests, as well as a prevalence index below three, indicate wetland hydrology at this data point.

SOIL

Sampling Point: DP07W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 6/1	90	10YR 5/8	10	C	M	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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Prominent redoximorphic concentrations common within the depleted matrix.

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 Vis ble 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 along 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 (2 or more 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): 8

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Saturation 8 inches from the soil surface, a positive FAC-neutral test, and the geomorphic position of the point provide evidence of wetland hydrology.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP08U

Investigator(s): J Trilling Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Valley Flat Local relief (concave, convex, none): Undulating Slope (%): 3

Subregion (LRR): E 43A Lat: 48.1093015 Long: -115.4140692 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located to the south of wetland cell 3.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	50	✔	UPL
2. Equisetum arvense	25	✔	FAC
3. Elymus lanceolatus	5		FACU
4. Phalaris arundinacea	5		FACW
5. Poa pratensis	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

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: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	30	x 3 =	90
FACU species	5	x 4 =	20
UPL species	50	x 5 =	250
Column Totals:	90 (A)		370 (B)

Prevalence Index = B/A = 4.11

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of a hydrophytic vegetation community observed.

SOIL

Sampling Point: DP08U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 13	10YR 5/1	98	10YR 5/6	2	C	M	Loam	
13 - 20	10YR 6/1						Sandy 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Low chroma and high value soils the result of volcanically derived soils.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP08W

Investigator(s): J Trilling Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Ephemeral Stream Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): E 43A Lat: 48.1093879 Long: -115.414084 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located to the south of wetland cell 3.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	75	✔	FACW
2. Alopecurus arundinaceus	15		FAC
3. Equisetum arvense	2		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 8

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	17	x 3 =	51
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	92 (A)		201 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

A positive rapid test, positive dominance test, and prevalence index below three indicate the presence of a hydrophytic vegetation community.

SOIL

Sampling Point: DP08W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/2	98	7.5YR 4/6	2	C	M	Loam	fine roots
10 - 18	10YR 4/2	95	7.5YR 4/6	5	C	M	Clay 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Prominent redoximorphic concentrations common within the depleted matrix.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive FAC-neutral test, the geomorphic position of the point, and oxidized rhizospheres along living roots provide evidence of wetland hydrology.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP09U

Investigator(s): J Trilling Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Linear Slope (%): 3

Subregion (LRR): E 43A Lat: 48.1104652 Long: -115.4159012 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located between southwest edge of wetland cell 3 and project boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	85	✔	UPL
2. Alopecurus arundinaceus	15		
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	85	x 5 =	425
Column Totals:	85 (A)		425 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of a hydrophytic vegetation community observed.

SOIL

Sampling Point: DP09U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 3/2	100					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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 evidence of hydric soils observed.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP09W

Investigator(s): J Trilling Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 4

Subregion (LRR): E 43A Lat: 48.1106393 Long: -115.4157624 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located between southwest edge of wetland cell 3 and project boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	100	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic 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:

A positive rapid test, positive dominance test, and prevalence index below three provide evidence for a hydrophytic vegetation community at this data point.

SOIL

Sampling Point: DP09W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Loam	fine roots
4 - 14	10YR 2/1	98	7.5YR 4/6	2	C	M	Loam	
14 - 20	10YR 6/1	97	7.5YR 4/6	3	C		Sandy 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Prominent redoximorphic concentrations common within the dark surface layer.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive FAC-neutral test and the geomorphic position of the point indicate wetland hydrology at this location.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP10U

Investigator(s): J Trilling Section, Township, Range: S12 T27N R30W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 15

Subregion (LRR): E 43A Lat: 48.1114396 Long: -115.4170984 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Upland sample point located at west corner of wetland cell 8.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	45	✔	UPL
2. Pascopyrum smithii	20	✔	FACU
3. Alopecurus arundinaceus	15		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	20	x 4 =	80
UPL species	45	x 5 =	225
Column Totals:	80 (A)		350 (B)

Prevalence Index = B/A = 4.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic 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:

No evidence of a hydrophytic vegetation community observed, as sampling pit could only get to a depth of 10" due to cobbles in the substrate.

SOIL

Sampling Point: DP10U

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

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

[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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Cobbles

Depth (inches): 10

Hydric Soil Present? Yes _____ No ✔

Remarks:

No evidence of hydric soils observed.

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 Vis ble 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 along 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 (2 or more 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, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed.

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

Project/Site: Schrieber Meadows City/County: Lincoln County Sampling Date: 2023-07-11

Applicant/Owner: MDT State: Montana Sampling Point: DP10W

Investigator(s): J Trilling Section, Township, Range: S12 T27N R30W

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): E 43A Lat: 48.1114195 Long: -115.4170587 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: Not mapped

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:

Wetland sample point located at west corner of wetland cell 8.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	65	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 35

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	65 (A)		130 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ✔ 1 - Rapid Test for Hydrophytic 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:

A positive rapid test, positive dominance test, and prevalence index below three indicate hydrophytic vegetation at this data point.

SOIL

Sampling Point: DP10W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	100					Mucky Peat	fine roots
16 - 20	10YR 4/2	100					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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Aquic conditions present at this point.

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 Vis ble 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 along 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 (2 or more 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): 18

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

The geomorphic position of the point and a positive FAC-neutral test provide evidence of wetland hydrology at this location.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Schrieber Meadows **2. MDT Project #:** NH 27 (021) **Control #:** 1027001

3. Evaluation Date: 09/11/2023 **4. Evaluator(s):** J Trilling **5. Wetlands/Site #(s):** Creation

6. Wetland Location(s): i. Legal: T27N,R30W,11,12,13 **Latitude/Longitude:** 48.112259, -115.416325 : Center of AA

ii. Approx. Stationing or Mileposts:

iii. Watershed: 1

Watershed Name, County: Kootenai, Lincoln

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

1. ___ Wetlands potentially affected by MDT project
2. ___ Mitigation wetlands; pre-construction
3. X Mitigation wetlands; post-construction
4. ___ Other:

8. Wetland size: 23.440 acres (measured)

9. Assessment area (AA): 23.440 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	E	PP	10.00
D	EM	E	PP	35.00
S	EM	NA	SI	20.00
S	EM	NA	PP	35.00

Abbreviations: *(see manual for definitions)*

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

COMMON

12. General condition of AA:

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) list)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is >=15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is <= 30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <= 15%.	low disturbance	**low disturbance**	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=	moderate disturbance	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc.): Highway 2 and USFS roads are adjacent to the AA, land is not cultivated, and low disturbance. Ox-eye daisy continues to increase in cover in the NW portion of the site, continuing a trend observed in 2022.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense, Leucanthemum vulgare, Hieracium aurantiacum

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: AA includes constructed wetland depressions and adjacent wetland habitat that has been created by the plugging of existing ditches and channels, creation of a new stream channel and subsidence of the histosol soil elevations over time. The surrounding land is currently managed in a natural state. USFS land surrounds the majority of the site.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	**Initial Rating**	**Is current management preventing (passive) existence of additional vegetated classes?**		**Modified Rating**
>= 3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	**M**	NA	NA	NA
1 class, but not a monoculture	M	<-- NO	YES -->	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	NA

Comments: Emergent and aquatic bed classes are present

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
	Grizzly Bear(D)	Canada Lynx(S) North American Wolverine(S)

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
Functional Points and Rating	1H	.9H	**.8M**	.7M	.3L	.1L	0L

Sources for documented use (e.g. observations, records, etc): USFWS database, MTNHP, MDT observations and reports from FWP, USFWS, and FS on use.

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
Western toad (S2)(D) - S2S3		

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
***S1 Species:** Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
***S2 and S3 Species:** Functional Points and Rating*	**.9H**	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use (e.g. observations, records, etc): MTNHP and documented breeding on site by MDT and USFS personnel.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- X observations of abundant wildlife #s or high species diversity (during any period)
- X abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ presence of extremely limiting habitat features not available in the surrounding area
- ___ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):
- ___ few or no wildlife observations during peak use periods
- ___ little to no wildlife sign
- ___ sparse adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- ___ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ___ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ adequate adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other interms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in >=10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	**E**	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Moderate
Substantial	**1E**	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: Observed waterfowl, wildlife, and wildlife tracks/scat during the 2023 site visit.

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then mark ___ **NA** and proceed to 14E.)

Type of Fishery: Cold Water **(CW)** **X** Warm Water **(WW)** ___ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	**.6M**	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA: Visual observations.

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? ___ *If yes, reduce score in i above by 0.1.*

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ___ *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia.***

iii. Final Score and Rating: 0.6M **Comments:** Pumpkinseed and brook trout were observed by MDT and monitoring crews in open water in 2019 and previous years. Likely largemouth bass and brook trout were observed in 2023

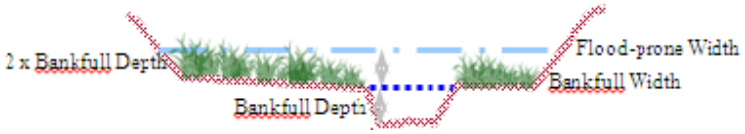
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark ___ **NA** and proceed to 14F.)

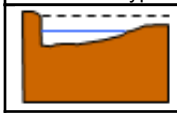
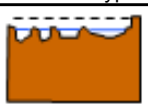
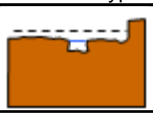
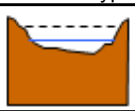
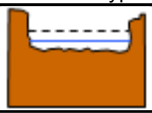
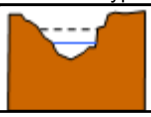
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	**.5M**	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width) Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

35 /	5 =	**7.00**
Flood-prone width	*Bankfull width*	*Entrenchment ratio (ER)*



Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ **Comments:** Highway adjacent to the site, minimal trees or shrubs present.

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, mark ___ **NA** and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			<=1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **>= 5 out of 10 years**	**1H**	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Extensive areas of perennial inundation greater than 2 feet deep were observed in 2023.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, mark ___ **NA** and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H=high, M=moderate, or L=low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	>= 70%		< 70%		>= 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	**.9H**	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: AA dominated by >70% reed canarygrass, presence of flooding/ponding, unrestricted outlet flows into Schrieber Lake.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, mark ___ **NA** and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of >=6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
>= 65%	**1H**	.9H	.7M
35-64%	.7M	.6M	.5M
35%	.3L	.2L	.1L

Comments: Perennial hydrologic regime in estimated 80% of the AA. Species with high stability ratings are established on the perimeters of excavated areas.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	**H**	M	M
L	M	M	L
N/A	H	M	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component < 1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	**1H**	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB):** Area with >= 30% plant cover, = 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference? ___**X**___ *If yes, add 0.1 to the score in ii above.*

iv. Final Score and Rating: **1.00H** **Comments:** High level of biological activity, veg component > 5 ac, perennial, has surface and subsurface outlets.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators

	The AA is a slope wetland
X	Springs or seeps are known or observed
	Vegetation growing during dormant season/drought
	Wetland occurs at the toe of a natural slope
X	AA permanently flooded during drought periods
	Wetland contains an outlet, but no inlet
X	Shallow water table and the site is saturated to the surface
X	Other: large spring located near the middle of the AA

ii. Recharge Indicators

	Permeable substrate present without underlying impeding layer
	Wetland contains inlet but no outlet
	Stream is a known 'losing' stream; discharge volume decreases
	Other:

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	**1H**	.7M	.4M	.1L
Insufficient Data/Information	N/A			

Comments: AA with perennial inundation/saturation to the surface.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	**.4M**	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments: Structural diversity not expected to increase with present perennial water regime and high water depth (2-3ft).

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) **X** (if 'Yes' continue with the evaluation; if 'No' then mark ___ **NA** and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: **X** Educational/scientific study; **X** Consumptive rec.; **X** Non-consumptive rec.; ___ Other :

iii. Rating:

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	**.2H**	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments: Known recreation site.

General Site Notes
The northern portion of this AA experiences seasonal surface hydrology and has fluctuated between wetlands and non-wetlands over the years.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Creation

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	M	0.80	1	18.75	
B. MT Natural Heritage Program Species Habitat	H	0.90	1	21.10	
C. General Wildlife Habitat	E	1.00	1	23.44	*
D. General Fish Habitat	M	0.60	1	14.06	
E. Flood Attenuation	M	0.50	1	11.72	
F. Short and Long Term Surface Water Storage	H	1.00	1	23.44	*
G. Sediment/Nutrient/Toxicant Removal	H	0.90	1	21.10	
H. Sediment/Shoreline Stabilization	H	1.00	1	23.44	
I. Production Export/Food Chain Support	H	1.00	1	23.44	*
J. Groundwater Discharge/Recharge	H	1.00	1	23.44	*
K. Uniqueness	M	0.40	1	9.38	
L. Recreation/Education Potential (bonus points)	H	0.20	1	4.69	
Totals:		9.30	11.00	218.00	
Percent of Possible Score			85%		

Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II)

____ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
____ Score of 1 functional point for Uniqueness; **or**
____ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; **or**
__X__ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV)

____ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
__X__ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
____ Score of .9 or 1 functional point for General Fish Habitat; **or**
____ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
____ Score of .9 functional point for Uniqueness; **or**
__X__ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)

____ "Low" rating for Uniqueness; **and**
____ Vegetated wetland component 1 acre (do not include upland vegetated buffer); **and**
____ Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: I

Summary Comments: Overall a highly productive AA.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Schrieber Meadows **2. MDT Project #:** NH 27 (021) **Control #:** 1027001

3. Evaluation Date: 09/11/2023 **4. Evaluator(s):** J Trilling **5. Wetlands/Site #(s):** Enhancement

6. Wetland Location(s): i. Legal: T27N,R30W,11,12,13 **Latitude/Longitude:** 48.111022, -115.41427 : Center of AA

ii. Approx. Stationing or Mileposts:

iii. Watershed: 1

Watershed Name, County: Kootenai, Lincoln

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

1. ___ Wetlands potentially affected by MDT project
2. ___ Mitigation wetlands; pre-construction
3. X Mitigation wetlands; post-construction
4. ___ Other:

8. Wetland size: 6.770 acres (measured)

9. Assessment area (AA): 6.770 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
S	AB	NA	PP	22.00
S	EM	NA	SI	20.00
S	EM	NA	PP	58.00

Abbreviations: *(see manual for definitions)*

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

COMMON

12. General condition of AA:

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) list)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is >=15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is <= 30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <= 15%.	low disturbance	**low disturbance**	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=	moderate disturbance	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc.): Highway 2 and USFS roads are adjacent to the AA, land is not cultivated, minimal noxious weeds, and low disturbance.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: AA includes existing wetlands located between stream mitigation area and US Hwy 2. The emergent wetland is dominated by reed canary grass and Alopecurus spp. Restoration efforts and beaver activity south of Schrieber Lake have resulted in increased inundation, resulting in some of the emergent wetland transitioning to aquatic bed. Adjacent land use is forest and the highway.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	**Initial Rating**	**Is current management preventing (passive) existence of additional vegetated classes?**		**Modified Rating**
>= 3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	**M**	NA	NA	NA
1 class, but not a monoculture	M	<-- NO	YES -->	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	NA

Comments: Aquatic bed, and emergent wetland dominated by primarily reed canary grass.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
	Grizzly Bear(D)	Canada Lynx(S) North American Wolverine(S)

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
Functional Points and Rating	1H	.9H	**.8M**	.7M	.3L	.1L	0L

Sources for documented use (e.g. observations, records, etc): USFWS database, MTNHP, MDT observations and reports of use from FWP, USFS, and USFWS.

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
Western toad (S2)(D) - S2S3		

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
***S1 Species:** Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
***S2 and S3 Species:** Functional Points and Rating*	**.9H**	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use (e.g. observations, records, etc): MTNHP and documented breeding on site by MDT and USFS personnel.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- X observations of abundant wildlife #s or high species diversity (during any period)
- X abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ presence of extremely limiting habitat features not available in the surrounding area
- ___ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):
- ___ few or no wildlife observations during peak use periods
- ___ little to no wildlife sign
- ___ sparse adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- ___ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ___ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ adequate adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other interms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in >=10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	**E**	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Moderate
Substantial	**1E**	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: Substantial wildlife use within the AA; however, US Highway 2 abuts this area and precludes wildlife usage at various times of the day due traffic.

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then mark ___ **NA** and proceed to 14E.)

Type of Fishery: Cold Water **(CW) X** Warm Water **(WW)** ___ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	**.3L**	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA: Visual observations.

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? ___ *If yes, reduce score in i above by 0.1.*

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ___ *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia.***

iii. Final Score and Rating: 0.2L **Comments:** Minimal fish habitat present, no fish have been observed in AA.

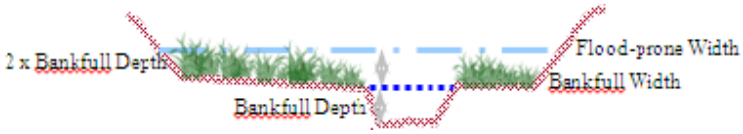
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark ___ **NA** and proceed to 14F.)

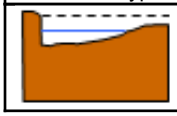
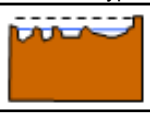
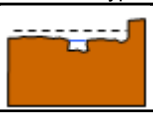
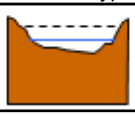
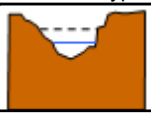
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	**.5M**	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width) Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

35 /	5 =	**7.00**
Flood-prone width	*Bankfull width*	*Entrenchment ratio (ER)*



Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ **Comments:** Unrestricted outlet, minimal trees or shrubs present.

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, mark ___ **NA** and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			<=1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **>= 5 out of 10 years**	**1H**	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: AA includes constructed wetland depressions and adjacent wetland habitat that has been created by inundation from restoration efforts. These efforts include plugging of existing ditches and channels and creation of a new stream channel.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, mark ___ **NA** and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H=high, M=moderate, or L=low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	>= 70%		< 70%		>= 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	**1H**	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: AA vegetated primarily with reed canarygrass, presence of flooding/ponding, restricted outlet.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, mark ___ **NA** and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of >=6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
>= 65%	**1H**	.9H	.7M
35-64%	.7M	.6M	.5M
35%	.3L	.2L	.1L

Comments: Open water areas subject to wave action, well vegetated with near monoculture of reed canarygrass.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	**M**	M	L
N/A	H	M	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component < 1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	**.8H**	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB):** Area with >= 30% plant cover, = 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference? **X** *If yes, add 0.1 to the score in ii above.*

iv. Final Score and Rating: **0.90H** **Comments:** Low fish habitat rating, vegetation component >5 ac, moderate biological activity, perennial hydrology with restricted outlet.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators

___	The AA is a slope wetland
___	Springs or seeps are known or observed
___	Vegetation growing during dormant season/drought
___	Wetland occurs at the toe of a natural slope
___	AA permanently flooded during drought periods
___	Wetland contains an outlet, but no inlet
X	Shallow water table and the site is saturated to the surface
X	Other: Seeps are present at the wetland edge

ii. Recharge Indicators

___	Permeable substrate present without underlying impeding layer
___	Wetland contains inlet but no outlet
___	Stream is a known 'losing' stream; discharge volume decreases
___	Other:

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	**1H**	.7M	.4M	.1L
Insufficient Data/Information	N/A			

Comments: AA with shallow water table and perennial surface water (2-3 feet).

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	**.4M**	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments: AA with common relative abundance and moderate disturbance due to adjacent road.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) **X** (if 'Yes' continue with the evaluation; if 'No' then mark ___ **NA** and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: **X** Educational/scientific study; **X** Consumptive rec.; **X** Non-consumptive rec.; ___ Other :

iii. Rating:

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	**.2H**	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments: Known recreation site.

General Site Notes
Overall productive AA.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Enhancement

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	M	0.80	1	5.42	*
B. MT Natural Heritage Program Species Habitat	H	0.90	1	6.09	
C. General Wildlife Habitat	E	1.00	1	6.77	
D. General Fish Habitat	L	0.20	1	1.35	
E. Flood Attenuation	M	0.50	1	3.39	
F. Short and Long Term Surface Water Storage	H	1.00	1	6.77	*
G. Sediment/Nutrient/Toxicant Removal	H	1.00	1	6.77	*
H. Sediment/Shoreline Stabilization	H	1.00	1	6.77	
I. Production Export/Food Chain Support	H	0.90	1	6.09	*
J. Groundwater Discharge/Recharge	H	1.00	1	6.77	
K. Uniqueness	M	0.40	1	2.71	
L. Recreation/Education Potential (bonus points)	H	0.20	1	1.35	
Totals:		8.90	11.00	60.25	
Percent of Possible Score			81%		

Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II)

____ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
____ Score of 1 functional point for Uniqueness; **or**
____ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; **or**
__X__ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV)

____ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
__X__ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
____ Score of .9 or 1 functional point for General Fish Habitat; **or**
____ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
____ Score of .9 functional point for Uniqueness; **or**
__X__ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)

____ "Low" rating for Uniqueness; **and**
____ Vegetated wetland component 1 acre (do not include upland vegetated buffer); **and**
____ Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: I

Summary Comments: Most of AA is inundated by water. Emergent vegetation has been increasing in recent years.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Schrieber Meadows **2. MDT Project #:** NH 27 (021) **Control #:** 1027001

3. Evaluation Date: 11/28/2022 **4. Evaluator(s):** J Trilling **5. Wetlands/Site #(s):** Restoration

6. Wetland Location(s): i. Legal: T27N,R30W,11,12,13 **Latitude/Longitude:** 48.111359, -115.415081 : Center of AA

ii. Approx. Stationing or Mileposts:

iii. Watershed: 1

Watershed Name, County: Kootenai, Lincoln

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

1. ___ Wetlands potentially affected by MDT project
2. ___ Mitigation wetlands; pre-construction
3. X Mitigation wetlands; post-construction
4. ___ Other:

8. Wetland size: 2.350 acres (measured)

9. Assessment area (AA): 2.350 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	E	PP	35.00
D	EM	E	SI	30.00
D	EM	E	PP	35.00

Abbreviations: *(see manual for definitions)*

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

COMMON

12. General condition of AA:

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) list)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is >=15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is <= 30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <= 15%.	low disturbance	**low disturbance**	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=	moderate disturbance	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc.): Highway 2 and USFS roads are adjacent to the AA, land is not cultivated, minimal noxious weeds, and low disturbance.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense, Leucanthemum vulgare, isolated Hieracium aurantiacum

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA includes pre-existing wetlands identified within the project area that were modified by excavation to increase the groundwater availability and provide a greater diversity of wetland habitat and hydrophytes.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	**Initial Rating**	**Is current management preventing (passive) existence of additional vegetated classes?**		**Modified Rating**
>= 3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	**M**	NA	NA	NA
1 class, but not a monoculture	M	<-- NO	YES -->	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	NA

Comments: Emergent and aquatic bed classes.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
	Grizzly Bear(D)	North American Wolverine(S)
		Canada Lynx(S)

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
Functional Points and Rating	1H	.9H	**.8M**	.7M	.3L	.1L	0L

Sources for documented use (e.g. observations, records, etc): USFWS database, MTNHP, MDT observations

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
Western toad (S2)(D) - S2S3		

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
***S1 Species:** Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
***S2 and S3 Species:** Functional Points and Rating*	**.9H**	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use (e.g. observations, records, etc): MTNHP and documented breeding on site by MDT and USFS personnel.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):

- X observations of abundant wildlife #s or high species diversity (during any period)
- X abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ presence of extremely limiting habitat features not available in the surrounding area
- ___ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):

- ___ few or no wildlife observations during peak use periods
- ___ little to no wildlife sign
- ___ sparse adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):

- ___ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ___ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ adequate adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other interms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in >=10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	**E**	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Moderate
Substantial	**1E**	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: Good habitat diversity with substantial evidence of wildlife.

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then mark **X NA** and proceed to 14E.)

Type of Fishery: Cold Water **(CW)** ___ Warm Water **(WW)** ___ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA:

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? ___ *If yes, reduce score in i above by 0.1.*

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ___ *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia.***

iii. Final Score and Rating: NA **Comments:** No fish habitat identified within restoration AA

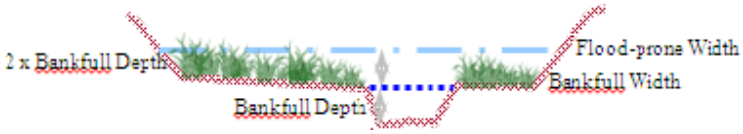
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark ___ **NA** and proceed to 14F.)

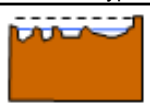
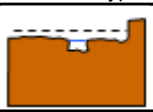
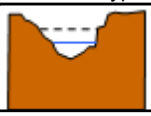
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	**.5M**	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width) Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

35 /	5 =	**7.00**
Flood-prone width	*Bankfull width*	*Entrenchment ratio (ER)*



Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ **Comments:** All wetland cells subject to flooding from Coyote Creek.

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, mark ___ **NA** and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			<=1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **>= 5 out of 10 years**	1H	.9H	.8H	**.8H**	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: AA with evidence of frequent flooding.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, mark ___ **NA** and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H=high, M=moderate, or L=low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	>= 70%		< 70%		>= 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	**.6M**	.4M	.4M	.3L	.2L	.1L

Comments: AA receives periodic overflow from Coyote Creek.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, mark ___ **NA** and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of >=6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
>= 65%	**1H**	.9H	.7M
35-64%	.7M	.6M	.5M
35%	.3L	.2L	.1L

Comments: Deeprooted vegetation such as reed canary grass surrounds open water.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
N/A	**H**	M	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component < 1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	**.9H**	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB):** Area with >= 30% plant cover, = 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference? **X** *If yes, add 0.1 to the score in ii above.*

iv. Final Score and Rating: 1.00H **Comments:** No fish habitat, high biological activity, well-vegetated buffer, unrestricted outlet to creek.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators

___	The AA is a slope wetland
___	Springs or seeps are known or observed
___	Vegetation growing during dormant season/drought
___	Wetland occurs at the toe of a natural slope
___	AA permanently flooded during drought periods
___	Wetland contains an outlet, but no inlet
X	Shallow water table and the site is saturated to the surface
X	Other: Seeps are present at the wetland edge

ii. Recharge Indicators

___	Permeable substrate present without underlying impeding layer
___	Wetland contains inlet but no outlet
___	Stream is a known 'losing' stream; discharge volume decreases
___	Other:

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	**1H**	.7M	.4M	.1L
Insufficient Data/Information	N/A			

Comments: Perennial spring located near AA.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	**.4M**	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments: Site was moderately disturbed before and after construction but has low disturbance at this time.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) **X** (if 'Yes' continue with the evaluation; if 'No' then mark ___ **NA** and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: **X** Educational/scientific study; ___ Consumptive rec.; **X** Non-consumptive rec.; ___ Other :

iii. Rating:

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	**.2H**	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments: Known recreation site

General Site Notes
Most of AA inundated throughout the year.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Restoration

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	M	0.80	1	1.88	
B. MT Natural Heritage Program Species Habitat	H	0.90	1	2.12	
C. General Wildlife Habitat	E	1.00	1	2.35	*
D. General Fish Habitat	NA				
E. Flood Attenuation	M	0.50	1	1.18	
F. Short and Long Term Surface Water Storage	H	0.80	1	1.88	
G. Sediment/Nutrient/Toxicant Removal	M	0.60	1	1.41	
H. Sediment/Shoreline Stabilization	H	1.00	1	2.35	*
I. Production Export/Food Chain Support	H	1.00	1	2.35	*
J. Groundwater Discharge/Recharge	H	1.00	1	2.35	*
K. Uniqueness	M	0.40	1	0.94	
L. Recreation/Education Potential (bonus points)	H	0.20	1	0.47	
Totals:		8.20	10.00	19.28	
Percent of Possible Score			82%		

Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II)

____ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
____ Score of 1 functional point for Uniqueness; **or**
____ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; **or**
__X__ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV)

____ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
__X__ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
____ Score of .9 or 1 functional point for General Fish Habitat; **or**
____ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
____ Score of .9 functional point for Uniqueness; **or**
__X__ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)

____ "Low" rating for Uniqueness; **and**
____ Vegetated wetland component 1 acre (do not include upland vegetated buffer); **and**
____ Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: I

Summary Comments: This AA is highly productive, as evidenced by abundant wildlife and vegetative cover.

Table B-1. Schrieber Meadows Wetland Mitigation Site. Comprehensive vegetation species list 2015-2023

Scientific Names	Common Names	WMVC Indicator Status[(a)]
Achillea millefolium	Common Yarrow	FACU
Achnatherum nelsonii	Nelson's Rice Grass	UPL
Agastache urticifolia	Nettle-Leaf Giant-Hyssop	FACU
Agropyron cristatum	Crested Wheatgrass	UPL
Agropyron sp.	Wheatgrass	N/A
Agrostis capillaris	Colonial Bent	FAC
Agrostis exarata	Spiked Bent	**FACW**
Agrostis gigantea	Black Bent	FAC
Agrostis scabra	Rough Bent	FAC
Agrostis stolonifera	Spreading Bent	FACW
Algae, brown	Algae, brown	N/A
Algae, green	Algae, green	N/A
Alisma gramineum	Narrow-Leaf Water-Plaintain	OBL
Alisma triviale	Northern Water-Plantain	OBL
Alnus incana	Speckled Alder	FACW
Alopecurus aequalis	Short-Awn Meadow-Foxtail	OBL
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FAC
Alopecurus pratensis	Field Meadow-Foxtail	FAC
Amelanchier alnifolia	Saskatoon Service-Berry	**FACU**
Arctium minus	Lesser Burrdock	UPL
Arnica chamissonis	Leafy Leopardbane	FACW
Aster sp.	Aster	N/A
Beckmannia syzigachne	American Slough Grass	OBL
Bromus carinatus	California Brome	UPL
Bromus inermis	Smooth Brome	FAC
Calamagrostis canadensis	Bluejoint	FACW
Carex aquatilis	Leafy Tussock Sedge	OBL
Carex athrostachya	Slender-Beak Sedge	FACW
Carex bebbii	Bebb's Sedge	OBL
Carex lasiocarpa	Woolly-Fruit Sedge	OBL
Carex microptera	Small-Wing Sedge	FACU
Carex nebrascensis	Nebraska Sedge	OBL
Carex pachystachya	Thick-Head Sedge	FAC
Carex pellita	Woolly Sedge	OBL
Carex scoparia	Pointed Broom Sedge	FACW
Carex sp.	Sedge	N/A

Scientific Names	Common Names	WMVC Indicator Status[a]
Carex stipata	Stalk-Grain Sedge	OBL
Carex utriculata	Northwest Territory Sedge	OBL
Centaurea stoebe	Spotted Knapweed	UPL
Cerastium arvense	Field Mouse-Ear Chickweed	FACU
Cerastium fontanum	Common Mouse-Ear Chickweed	FACU
Ceratophyllum demersum	Coon's-Tail	OBL
Chara sp.	Muskgrass	N/A
Cirsium arvense	Canadian Thistle	FAC
Cirsium vulgare	Bull Thistle	FACU
Collomia linearis	Narrow-Leaf Mountain-Trumpet	FACU
Cynoglossum officinale	Gypsy-Flower	FACU
Dactylis glomerata	Orchard Grass	**FACU**
Deschampsia cespitosa	Tufted Hairgrass	FACW
Eleocharis flavescens	Yellow Spike-Rush	OBL
Eleocharis palustris	Common Spike-Rush	OBL
Eleocharis quinqueflora	Few-Flower Spike-Rush	OBL
Elymus lanceolatus	Streamside Wild Rye	**FACU**
Elymus repens	Creeping Wild Rye	FAC
Elymus trachycaulus	Slender Wild Rye	FAC
Epilobium ciliatum	Fringed Willowherb	FACW
Epilobium sp.	Willowherb	N/A
Equisetum arvense	Field Horsetail	FAC
Equisetum hyemale	Tall Scouring-Rush	FACW
Erysimum cheiranthoides	Worm-Seed Wallflower	FACU
Festuca rubra	Red Fescue	**FAC**
Fragaria virginiana	Virginia Strawberry	FACU
Galium mexicanum	Mexican Bedstraw	FAC
Galium trifidum	Three-Petal Bedstraw	FACW
Geum macrophyllum	Large-Leaf Avens	FAC
Glyceria elata	Tall Manna Grass	FACW
Glyceria grandis	American Manna Grass	OBL
Glyceria sp.	Manna Grass	N/A
Glyceria striata	Fowl Manna Grass	OBL
Gnaphalium palustre	Western Marsh Cudweed	FACW
Hieracium aurantiacum	Orange Hawkweed	UPL
Hippuris vulgaris	Common Mare's-Tail	OBL
Juncus articulatus	Joint-Leaf Rush	OBL
Juncus bufonius	Toad Rush	FACW

Scientific Names	Common Names	WMVC Indicator Status[a]
Juncus confusus	Colorado Rush	FAC
Juncus ensifolius	Dagger-Leaf Rush	FACW
Juncus nodosus	Knotted Rush	OBL
Juncus tenuis	Lesser Poverty Rush	FAC
Lemna minor	Common Duckweed	OBL
Lepidium sp.	Pepperwort	N/A
Leucanthemum vulgare	Ox-Eye Daisy	FACU
Marsilea vestita	Hairy Water-Clover	OBL
Matricaria discoidea	Pineapple-Weed	FACU
Medicago lupulina	Black Medick	FACU
Mentha arvensis	American Wild Mint	FACW
Mimulus guttatus	Seep Monkey-Flower	OBL
Myriophyllum sibiricum	Siberian Water-Milfoil	OBL
Pascopyrum smithii	Western-Wheat Grass	FACU
Pedicularis groenlandica	Bull Elephant-Head	OBL
Penstemon confertus	Yellow Beardtongue	UPL
Peritoma serrulata	Rocky Mountain Bee Plant	FACU
Persicaria amphibia	Water Smartweed	OBL
Persicaria lapathifolia	Dock-Leaf Smartweed	FACW
Persicaria maculosa	Spotted Lady's-Thumb	FACW
Phalaris arundinacea	Reed Canary Grass	FACW
Phleum pratense	Common Timothy	FACU
Pinus contorta	Lodgepole Pine	FAC
Pinus ponderosa	Ponderosa Pine	FACU
Plantago major	Great Plantain	FAC
Poa palustris	Fowl Blue Grass	FAC
Poa pratensis	Kentucky Blue Grass	FAC
Poa sp.	Blue Grass	N/A
Polygonum douglasii	Douglas' Knotweed	FACU
Polypogon monspeliensis	Annual Rabbit's-Foot Grass	FACW
Populus balsamifera	Balsam Poplar	FAC
Potamogeton foliosus	Leafy Pondweed	OBL
Potamogeton natans	Broad-Leaf Pondweed	OBL
Potentilla gracilis	Graceful Cinquefoil	FAC
Potentilla norvegica	Norwegian Cinquefoil	FAC
Prunella vulgaris	Common Selfheal	FACU
Pseudotsuga menziesii	Douglas-Fir	FACU
Ranunculus aquatilis	Whitewater Crowfoot	OBL

Scientific Names	Common Names	WMVC Indicator Status[a]
Ranunculus sceleratus	Cursed Buttercup	OBL
Rosa woodsii	Woods' Rose	FACU
Rumex acetosella	Common Sheep Sorrel	FACU
Rumex crispus	Curly Dock	FAC
Salix bebbiana	Gray Willow	FACW
Salix candida	Sage Willow	OBL
Salix drummondiana	Drummond's Willow	FACW
Scirpus cyperinus	Cottongrass Bulrush	OBL
Scirpus microcarpus	Red-Tinge Bulrush	OBL
Senecio hydrophiloides	Stout Meadow Ragwort	FACW
Sisymbrium altissimum	Tall Hedge-Mustard	FACU
Solidago canadensis	Canadian Goldenrod	FACU
Sparganium emersum	European Burr-Reed	OBL
Sparganium natans	Arctic Burr-Reed	OBL
Spiranthes romanzoffiana	Hooded Ladies'-Tresses	FACW
Stuckenia pectinata	Sago False Pondweed	OBL
Suaeda calceoliformis	Paiuteweed	FACW
Symphoricarpos albus	Common Snowberry	FACU
Symphyotrichum spathulatum	Mountain American-Aster	FAC
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	UPL
Trifolium arvense	Rabbit-foot Clover	UPL
Trifolium hybridum	Alsike Clover	FAC
Trifolium pratense	Red Clover	FACU
Trifolium repens	White Clover	FAC
Triglochin maritima	Seaside Arrow-Grass	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Verbascum thapsus	Great Mullein	FACU
Veronica americana	American-Brooklime	OBL
Veronica anagallis-aquatica	Blue Water Speedwell	OBL
Veronica peregrina	Neckweed	OBL
Veronica serpyllifolia	Thyme-Leaf Speedwell	FAC

[a] 2020 NWPL (USACE 2020)

APPENDIX C
PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring
Schrieber Meadows
Lincoln County, Montana

Schrieber Meadows: Photo Point Photographs



Photo Point 1 – Panorama; Location: SW Corner of site; Bearing 270 degrees; Year 2012



Photo Point 1 – Panorama; Location: SW Corner of site; Bearing 270 degrees; Year 2023



Photo Point 3; Location: Cell 2 (Constructed in 2007); Bearing 90 degrees; Year 2010



Photo Point 3; Location: Cell 2 (Constructed in 2007); Bearing 90 degrees; Year 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 4; Location: Cell 2 (Constructed in 2007); Bearing 180 degrees; Year 2010



Photo Point 4; Location: Cell 2 (Constructed in 2007); Bearing 180 degrees; Year 2023



Photo Point 5; Location: Cell 2 (Constructed in 2007); Bearing 300 degrees; Year 2010



Photo Point 5; Location: Cell 2 (Constructed in 2007); Bearing 300 degrees; Year 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 6; Location: Cell 2 (Constructed in 2007); Bearing 40 degrees; Year 2010



Photo Point 6; Location: Cell 2 (Constructed in 2007); Bearing 40 degrees; Year 2023



Photo Point 7; Location: Lower Coyote Creek; Bearing 0 degrees; Year 2012



Photo Point 7; Location: Lower Coyote Creek; Bearing 0 degrees; Year 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 10; Location: Cell 3; Bearing 0 degrees; Year 2010



Photo Point 10; Location: Cell 3; Bearing 0 degrees; Year 2023



Photo Point 11; Location: Cell 2B; Bearing 190 degrees; Year 2012



Photo Point 11; Location: Cell 2B; Bearing 190 degrees; Year 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 12; Location: Cell 1 (Constructed in 2011); Bearing 180 degrees; Year 2012



Photo Point 12; Location: Cell 1 (Constructed in 2011); Bearing 180 degrees; Year 2023



Photo Point 13; Cell 3A (Constructed in 2011); Bearing 280 degrees; Year 2012



Photo Point 13; Cell 3A (Constructed in 2011); Bearing 280 degrees; Year 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 14; Location: Cell 4C (Constructed in 2011); Bearing 230 degrees; Year 2012



Photo Point 14; Location: Cell 4C (Constructed in 2011); Bearing 230 degrees; Year 2023



Photo Point 15; Location: Cell 5A (Constructed in 2011); Bearing 180 degrees; Year 2012



Photo Point 15; Location: Cell 5A (Constructed in 2011); Bearing 180 degrees; Year 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 16; Cell 6 (Constructed in 2011); Bearing 70 degrees; Year 2012



Photo Point 16; Cell 6 (Constructed in 2011); Bearing 70 degrees; Year 2023



Photo Point 17; Location: Cell 6 (Constructed in 2011); Bearing 270 degrees; Year 2012



Photo Point 17; Location: Cell 6 (Constructed in 2011); Bearing 270 degrees; Year 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 2 **Location**: Cell 7 (Created in 2007)
Bearing: 150 degrees **Year**: 2010



Photo Point 2 **Location:** Cell 7 (Created in 2007)
Bearing: 150 degrees **Year:** 2023



Photo Point 8 **Location:** Cell 3 (Constructed in 2007)
Bearing: 190 degrees **Year**: 2010



Photo Point 8 **Location:** Cell 3 (Constructed in 2007)
Bearing: 190 degrees **Year:** 2023



Photo Point 9 **Location:** Cell 3
Bearing: 280 degrees **Year:** 2010



Photo Point 9 **Location:** Cell 3
Bearing: 280 degrees **Year:** 2023

Schrieber Meadows: Photo Point Photographs



Photo Point 16 **Location:** Cell 5A
Bearing: 290 degrees **Year:** 2010



Photo Point 16 **Location:** Cell 5A
Bearing: 290 degrees **Year:** 2023



Photo Point 18 **Location:** Cell 3 (Constructed 2007)
Bearing: 90 degrees **Year:** 2012



Photo Point 18 **Location:** Cell 3 (Constructed 2007)
Bearing: 90 degrees **Year:** 2023



Photo Point 19 **Location:** West Boundary
Bearing: 10 degrees **Year:** 2012



Photo Point 19 **Location:** West Boundary
Bearing: 10 degrees **Year:** 2023

Schrieber Meadows: Photo Point Photographs

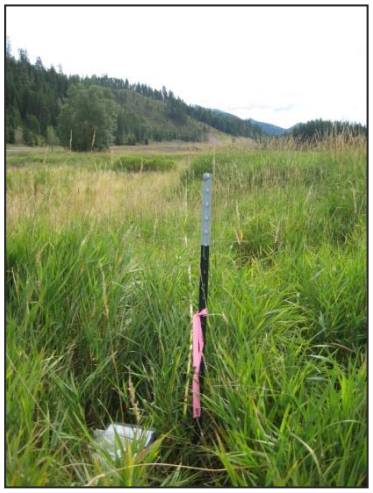


Photo Point 19 **Location:** West Boundary
Bearing: 100 degrees **Year:** 2012



Photo Point 19 **Location:** West Boundary
Bearing: 100 degrees **Year:** 2023

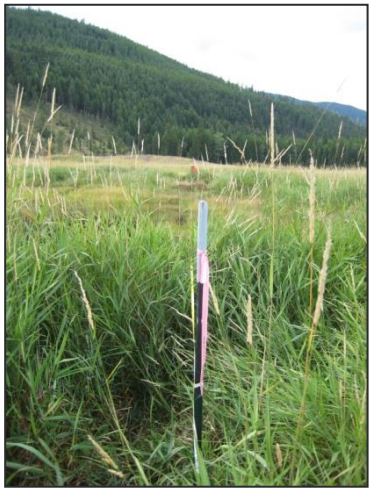
Schrieber Meadows: Vegetation Transect Photographs



Transect 1: Start **Location:** T-1
Bearing: 115 degrees **Year:** 2010



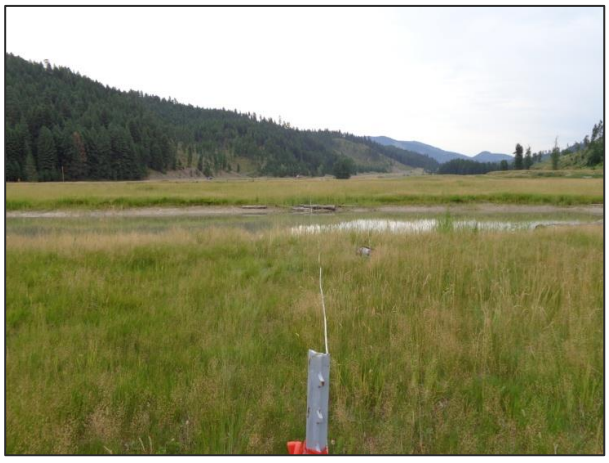
Transect 1: Start **Location:** T-1
Bearing: 115 degrees **Year:** 2023



Transect 1: End **Location:** T-1
Bearing: 295 degrees **Year:** 2010



Transect 1: End **Location:** T-1
Bearing: 295 degrees **Year:** 2023

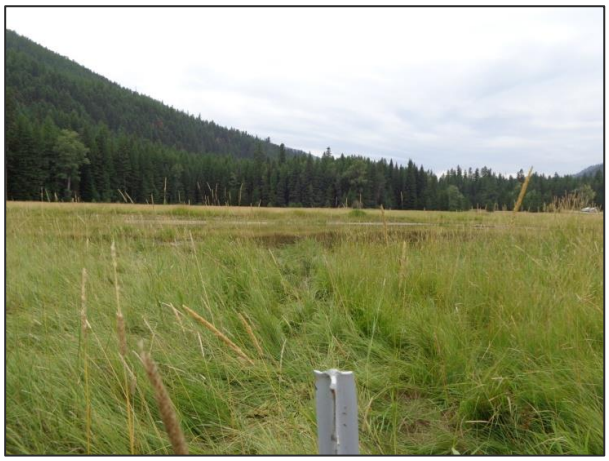


Transect 2: Start **Location:** T-2
Bearing: 100 degrees **Year:** 2013

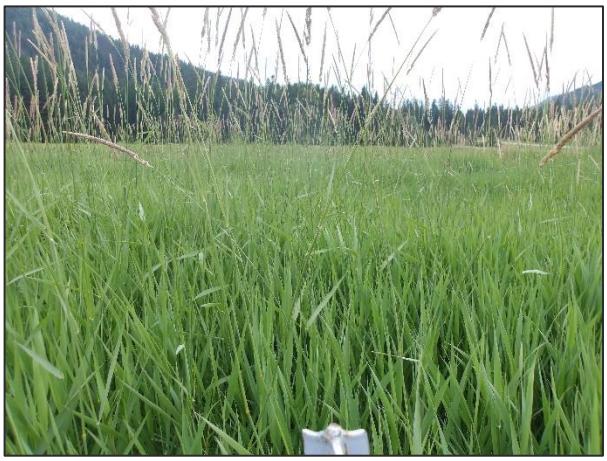


Transect 2: Start **Location:** T-2
Bearing: 100 degrees **Year:** 2023

Schrieber Meadows: Vegetation Transect Photographs



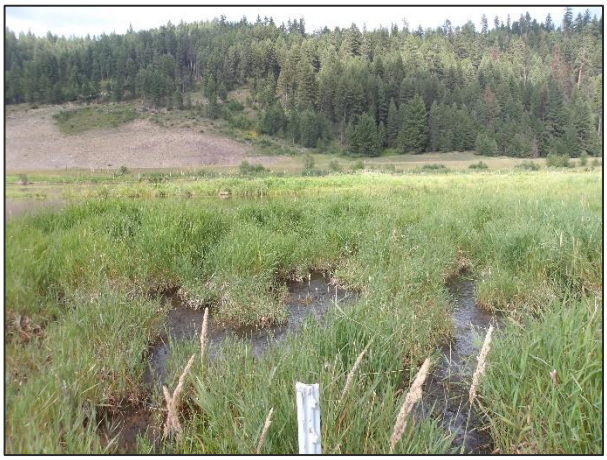
Transect 2: End
Bearing 280: degrees
Location: T-2
Year: 2013



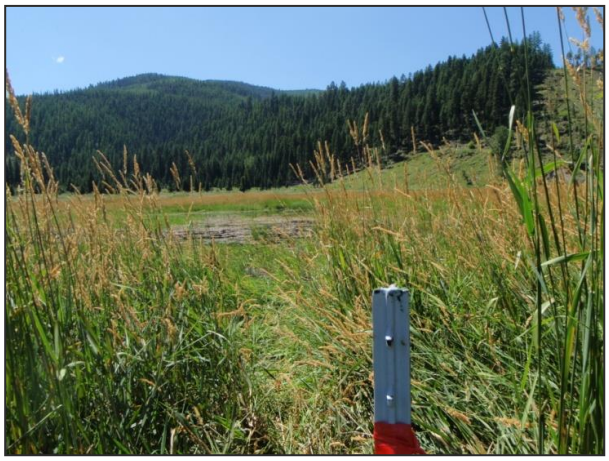
Transect 2: End
Bearing 280: degrees
Location: T-2
Year: 2023



Transect 3: Start
Bearing: 45 degrees
Location: T-3
Year: 2012



Transect 3: Start
Bearing: 45 degrees
Location: T-3
Year: 2023



Transect 3: End
Bearing: 225 degrees
Location: T-3
Year: 2012



Transect 3: End
Bearing: 225 degrees
Location: T-3
Year: 2023

Schrieber Meadows: Data Point Photographs



Data Point: DP01w **Location:** Veg Com 3
Year: 2023



Data Point: DP01u **Location:** Veg Com 9
Year: 2023



Data Point: DP02w **Location:** Veg Com 3
Year: 2023



Data Point: DP02u **Location:** Veg Com 8
Year: 2023



Data Point: DP03w **Location:** Veg Com 16
Year: 2023



Data Point: DP03u **Location:** Veg Com 9
Year: 2023

Schrieber Meadows: Data Point Photographs



Data Point: DP04w **Location:** Veg Com 3
Year: 2023



Data Point: DP04u **Location:** Veg Com 9
Year: 2023



Data Point: DP05w **Location:** Veg Com 14
Year: 2023



Data Point: DP05u **Location:** Veg Com 9
Year: 2023



Data Point: DP06w **Location:** Veg Com 16
Year: 2023



Data Point: DP06u **Location:** Veg Com 9
Year: 2023

Schrieber Meadows: Data Point Photographs



Data Point: DP07w **Location:** Veg Com 16
Year: 2023



Data Point: DP07u **Location:** Veg Com 9
Year: 2023



Data Point: DP08w **Location:** Veg Com 3
Year: 2023



Data Point: DP08u **Location:** Veg Com 9
Year: 2023



Data Point: DP09w **Location:** Veg Com 3
Year: 2023



Data Point: DP09u **Location:** Veg Com 9
Year: 2023



Data Point: DP10w **Location:** Veg Com 3
Year: 2023



Data Point: DP10u **Location:** Veg Com 9
Year: 2023

Schrieber Meadows: Cross-Section Photographs



Cross-Section: XS-1 **Location:** Upper Coyote Creek
Bearing: 280 degrees **Year:** 2012



Cross-Section: XS-1 **Location:** Upper Coyote Creek
Bearing: 280 degrees **Year:** 2023



Cross-Section: XS-2 **Location:** Upper Coyote Creek
Bearing: 320 degrees **Year:** 2012



Cross-Section: XS-2 **Location:** Upper Coyote Creek
Bearing: 320 degrees **Year:** 2023



Cross-Section: XS-3 **Location:** Coyote Creek Spring Area
Bearing: 320 degrees **Year:** 2012



Cross-Section: XS-3 **Location:** Coyote Creek Spring Area
Bearing: 320 degrees **Year:** 2023

Schrieber Meadows: Cross-Section Photographs



Cross-Section: XS-4 **Location:** Middle Coyote Creek
Bearing: 290 degrees **Year:** 2012



Cross-Section: XS-4 **Location:** Middle Coyote Creek
Bearing: 290 degrees **Year:** 2023



Cross-Section: XS-5 **Location:** Middle Coyote Creek
Bearing: 150 degrees **Year:** 2012



Cross-Section: XS-5 **Location:** Middle Coyote Creek
Bearing: 150 degrees **Year:** 2023



Cross-Section: XS-6 **Location:** Perennial Spring Creek
Bearing: 90 degrees **Year**: 2012



Cross-Section: XS-6 **Location:** Perennial Spring Creek
Bearing: 90 degrees **Year:** 2023

Schrieber Meadows: Cross-Section Photographs



Cross-Section: XS-7 **Location:** Middle Coyote Creek
Bearing: 90 degrees **Year:** 2012



Cross-Section: XS-7 **Location:** Middle Coyote Creek
Bearing: 220 degrees **Year:** 2023



Cross-Section: XS-8 **Location:** Middle Coyote Creek
Bearing: 170 degrees **Year:** 2012



Cross-Section: XS-8 **Location:** Middle Coyote Creek
Bearing: 170 degrees **Year:** 2023



Cross-Section: XS-9 **Location:** Middle Coyote Crk/Schrieber Crk **Bearing:** 130 degrees **Year:** 2012



Cross-Section: XS-9 **Location:** Middle Coyote Crk/Schrieber Crks **Bearing:** 130 degrees **Year:** 2023

Schrieber Meadows: Cross-Section Photographs



Cross-Section: XS-10 Location: Middle Coyote Crk/Schrieber Crks **Bearing:** 140 degrees **Year:** 2012



Cross-Section: XS-10 Location: Middle Coyote Crk/Schrieber Crks **Bearing:** 270 degrees **Year:** 2023



Cross-Section: XS-11 Location: Middle Coyote Crk/Schrieber Crks **Bearing:** 100 degrees **Year:** 2012

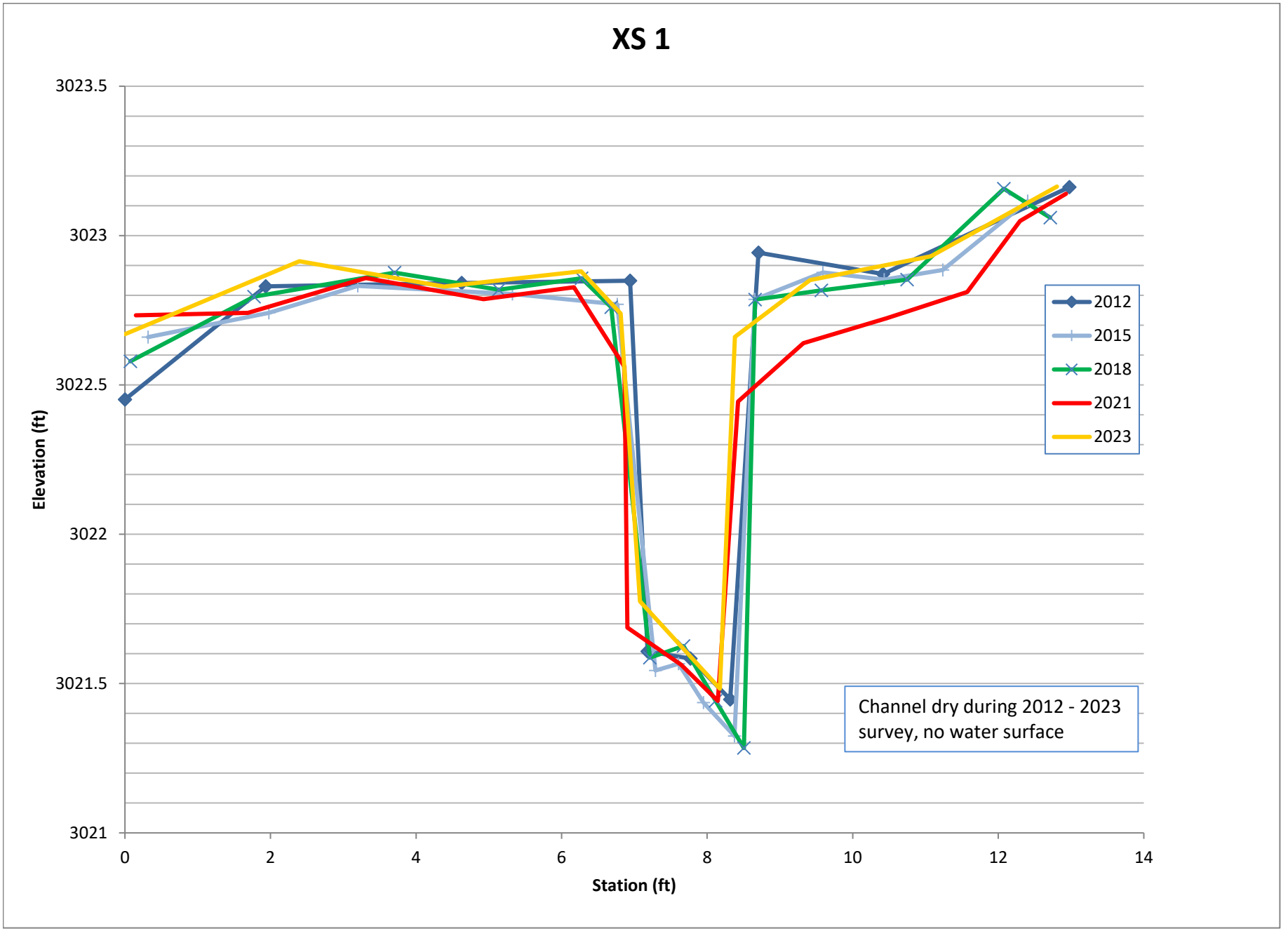


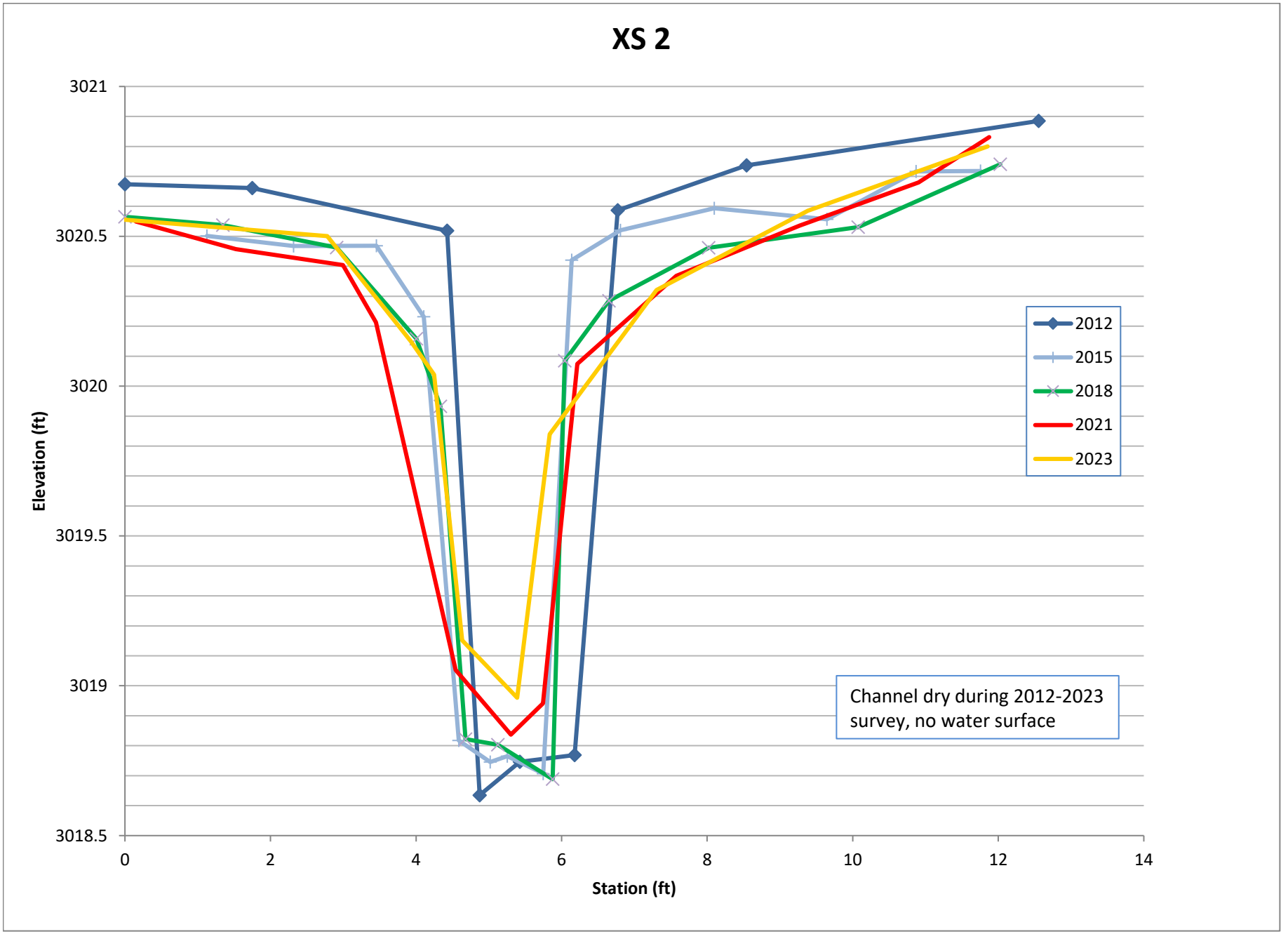
Cross-Section: XS-11 Location: Middle Coyote Crk/Schrieber Crks **Bearing:** 100 degrees **Year:** 2023

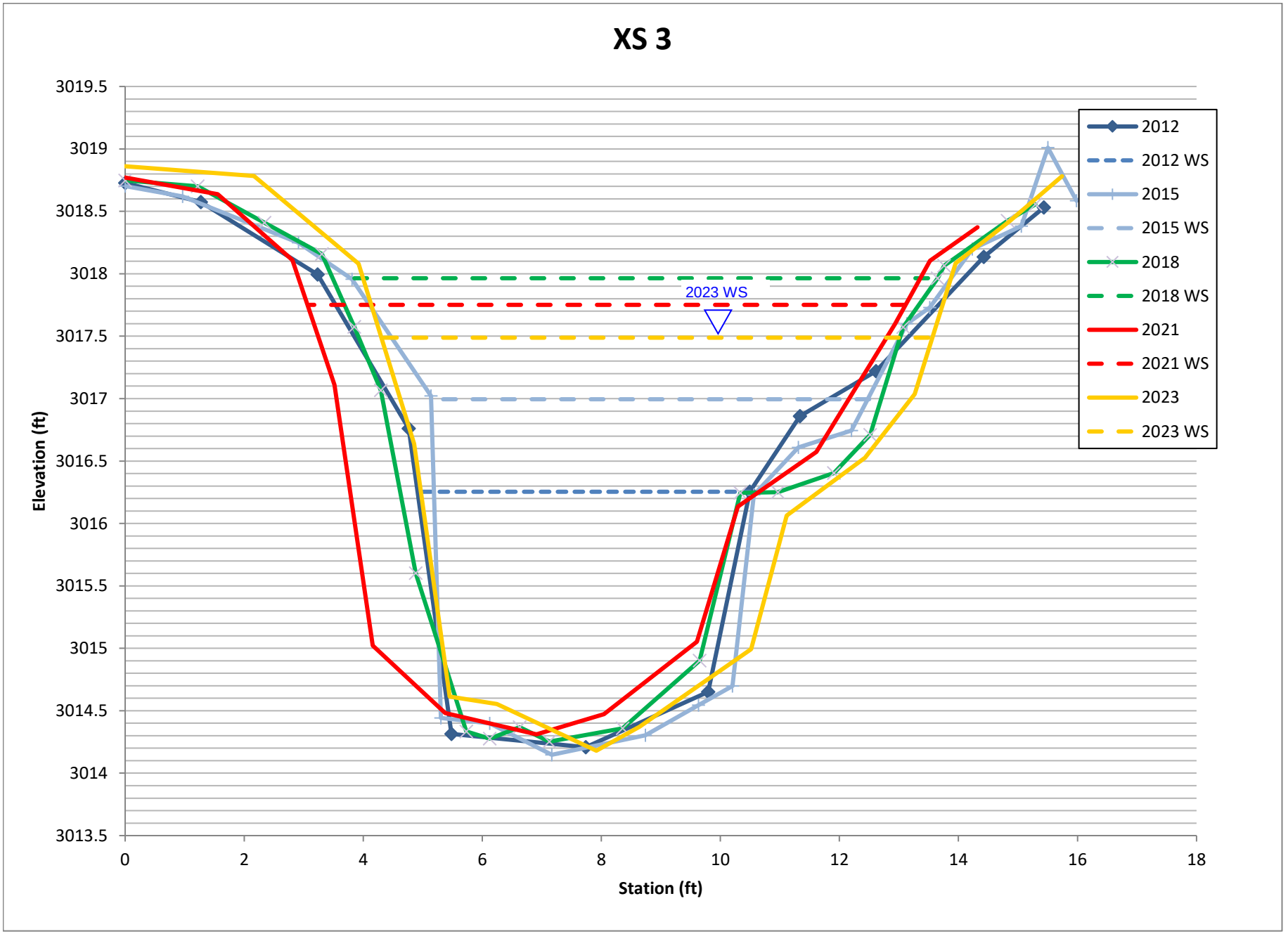
APPENDIX D

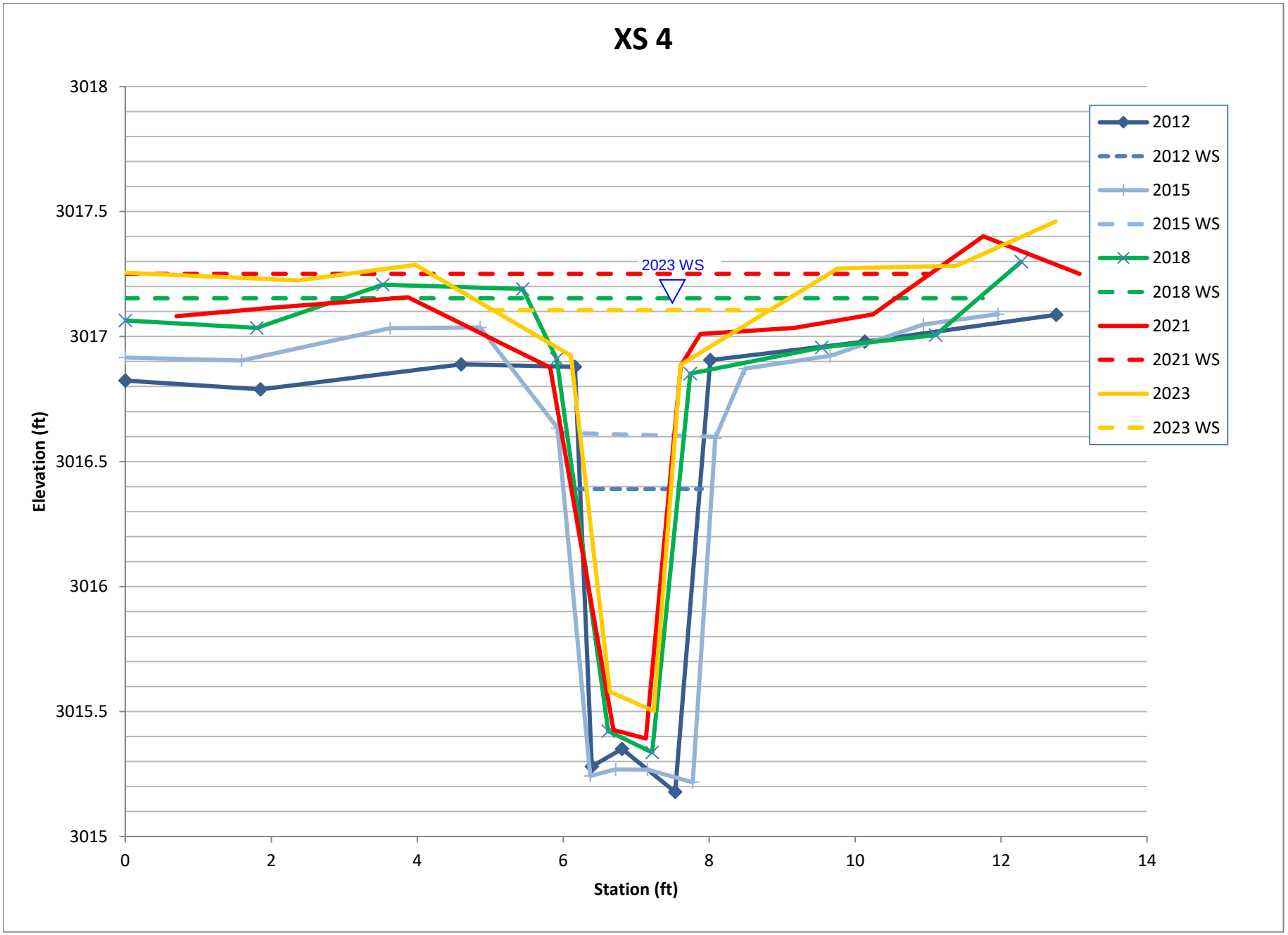
Surveyed Stream Cross Sections

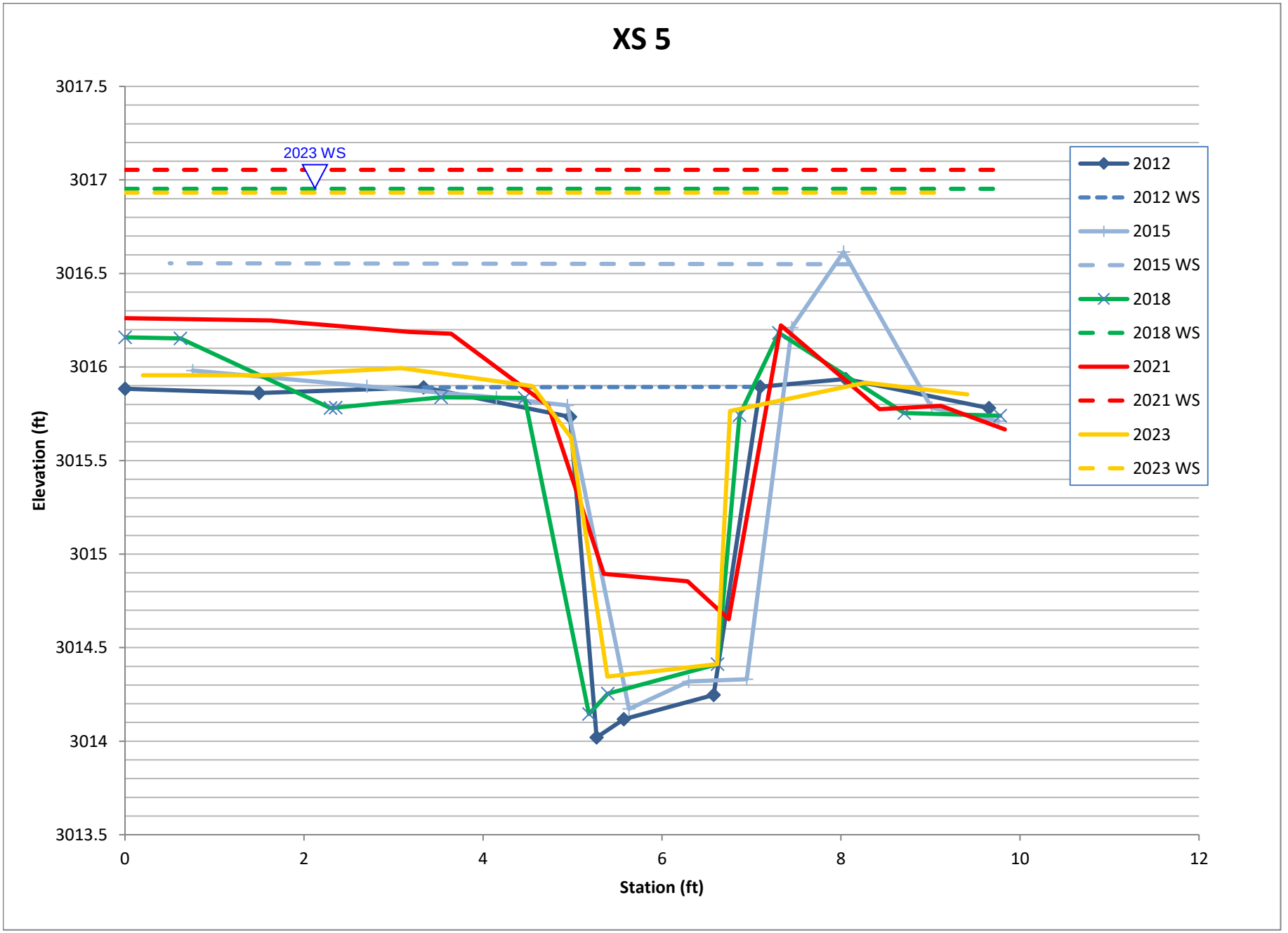
MDT Wetland Mitigation Monitoring
Schrieber Meadows
Lincoln County, Montana

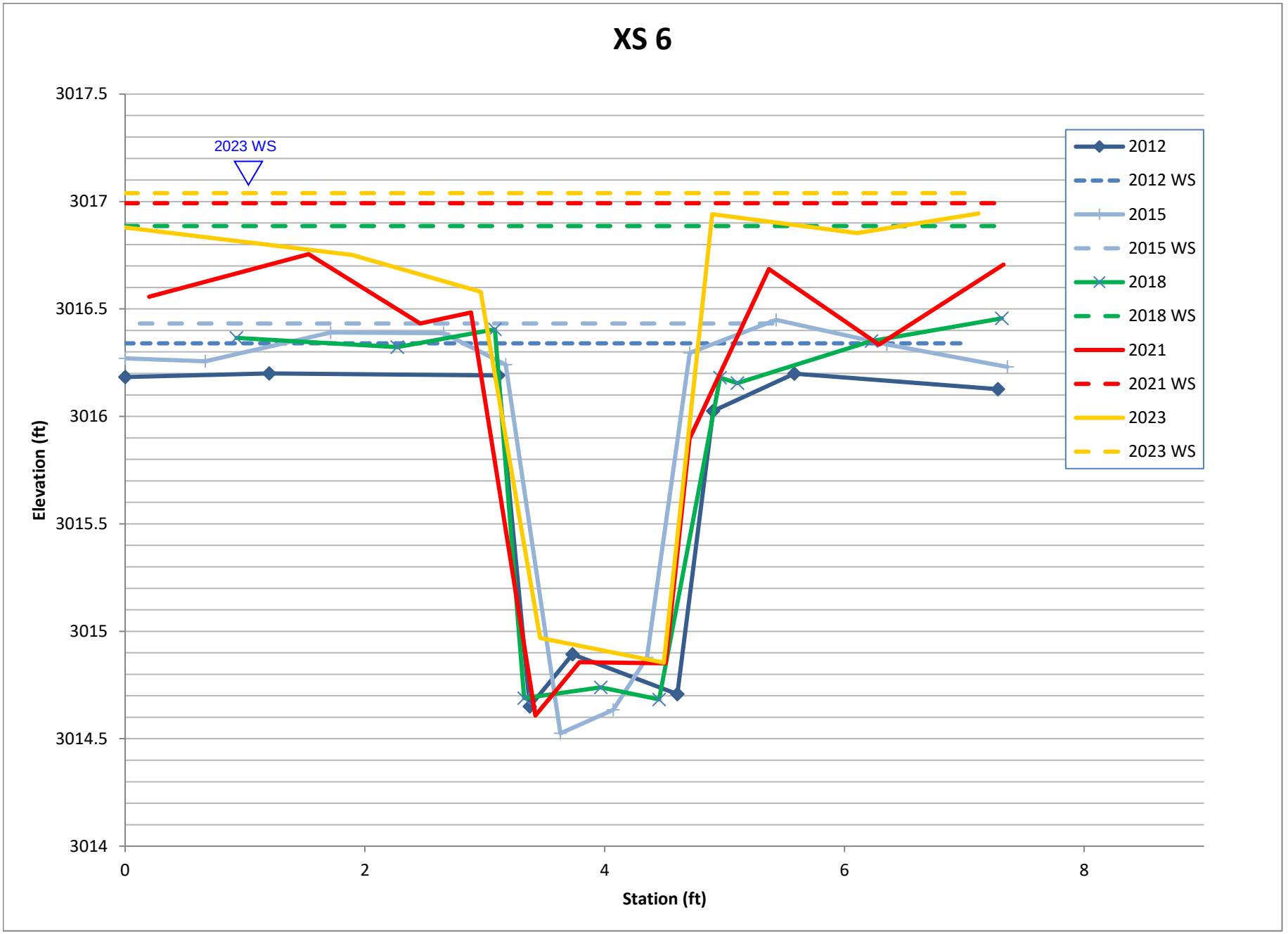

XS 1
3023.5
3023
3022.5
3022
3021.5
3021
Elevation (ft)
0
2
4
6
8
10
12
14
Station (ft)
2012
2015
2018
2021
2023
Channel dry during 2012 - 2023 survey, no water surface

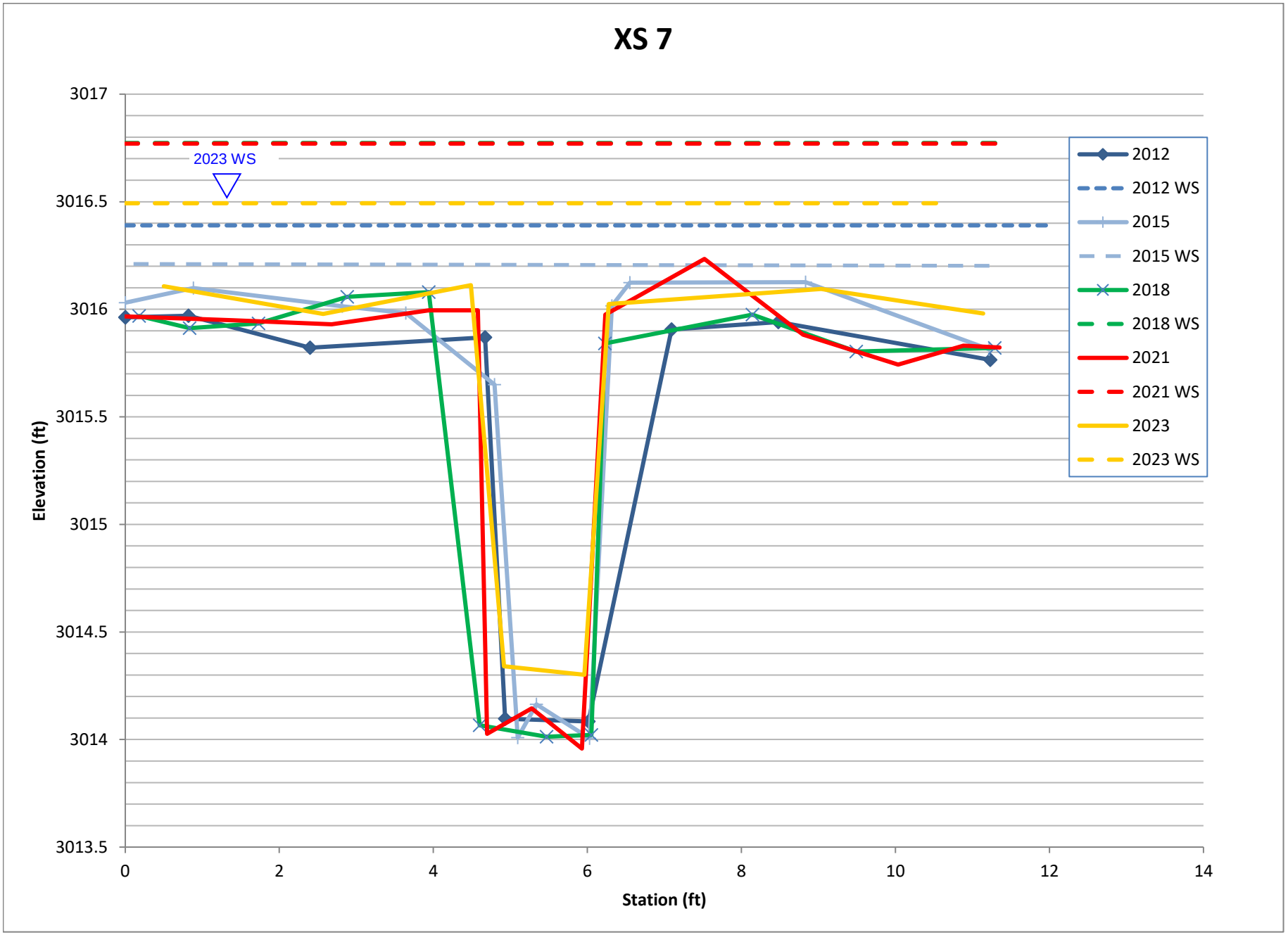

XS 2
3021
3020.5
3020
3019.5
3019
3018.5
Elevation (ft)
0
2
4
6
8
10
12
14
Station (ft)
2012
2015
2018
2021
2023
Channel dry during 2012-2023 survey, no water surface

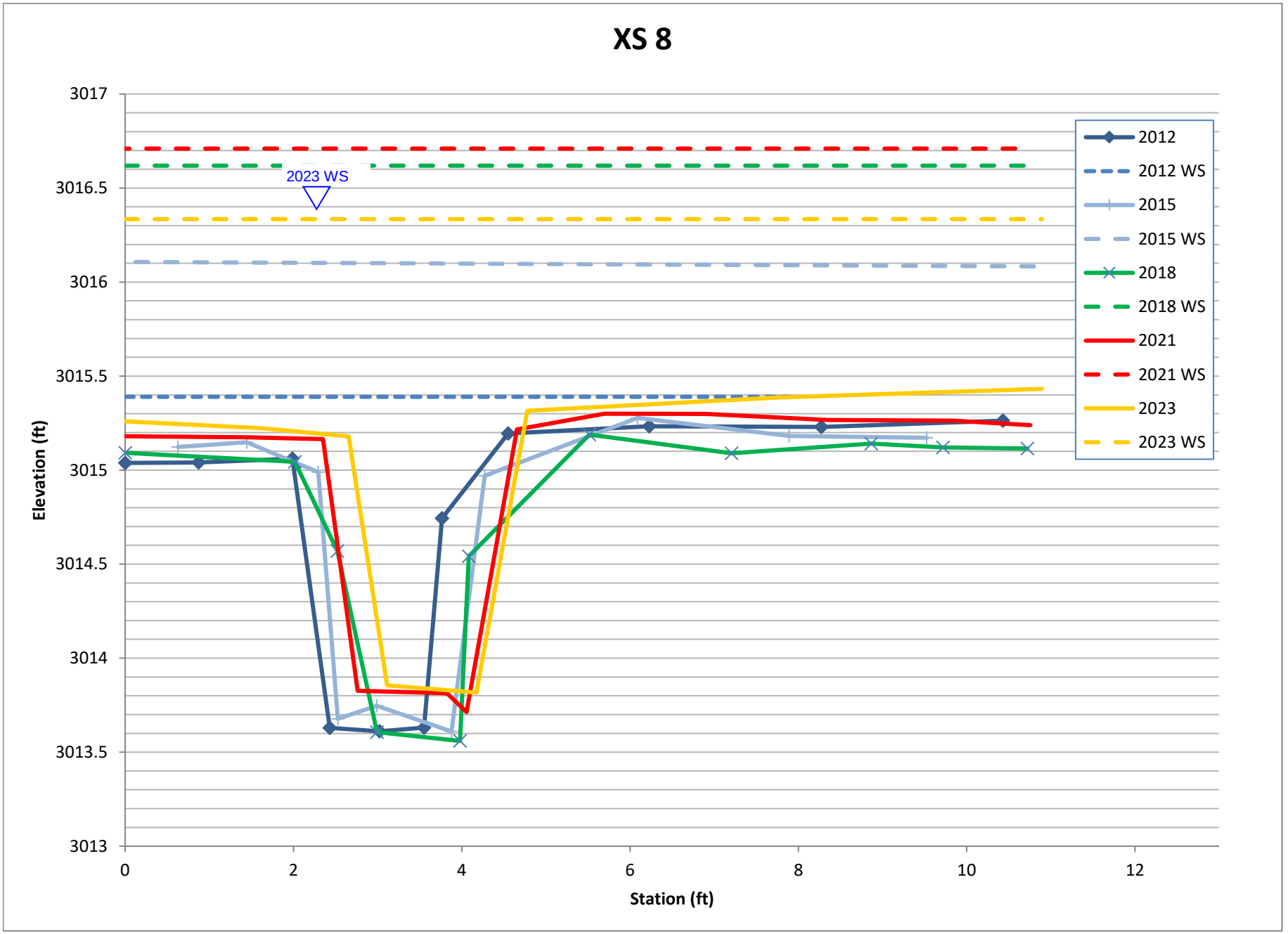

XS 3
3019.5
3019
3018.5
3018
3017.5
3017
3016.5
3016
3015.5
3015
3014.5
3014
3013.5
Elevation (ft)
0
2
4
6
8
10
12
14
16
18
Station (ft)
2023 WS
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS

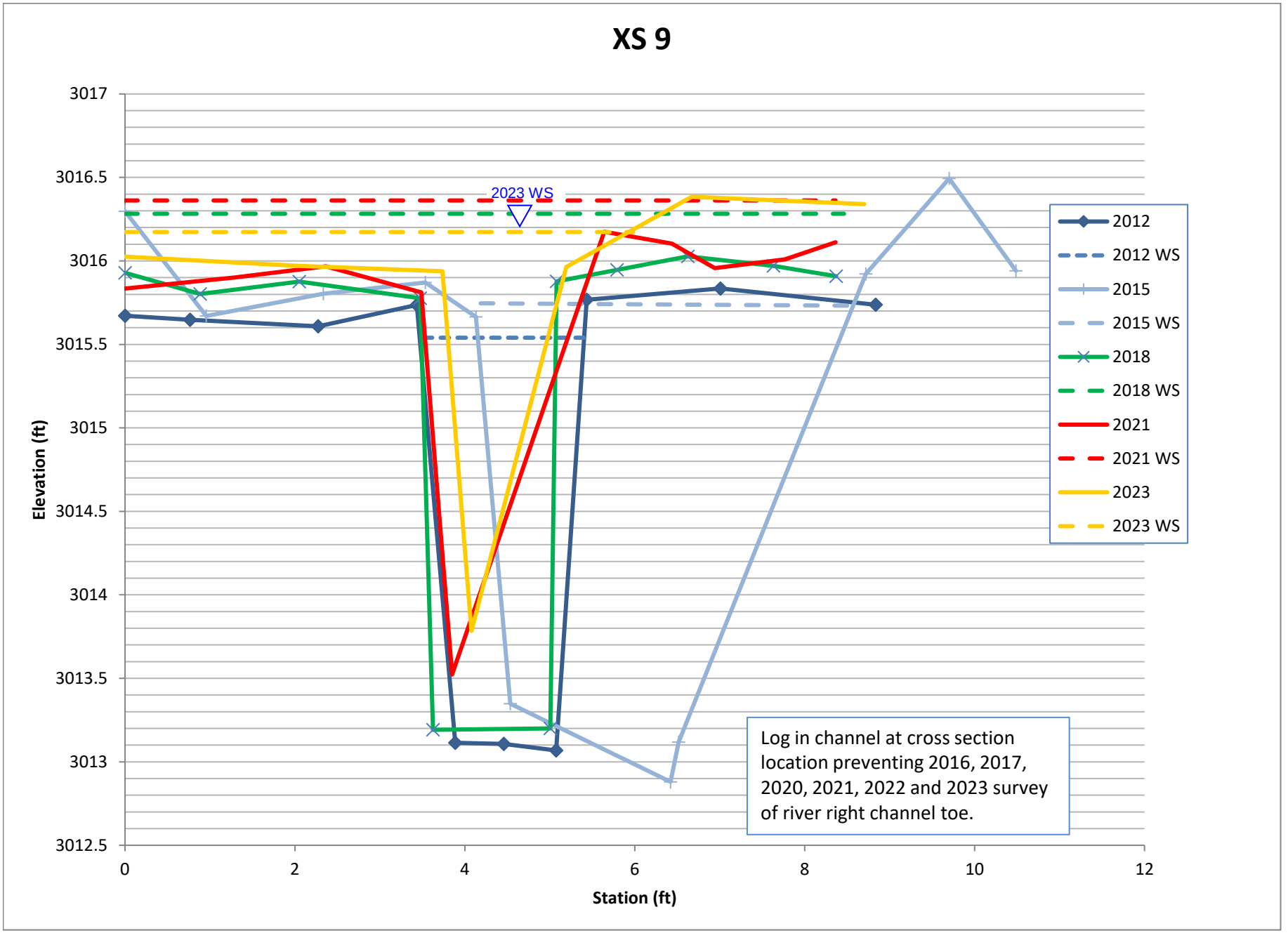

XS 4
3018
3017.5
3017
3016.5
3016
3015.5
3015
Elevation (ft)
0
2
4
6
8
10
12
14
Station (ft)
2023 WS
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS

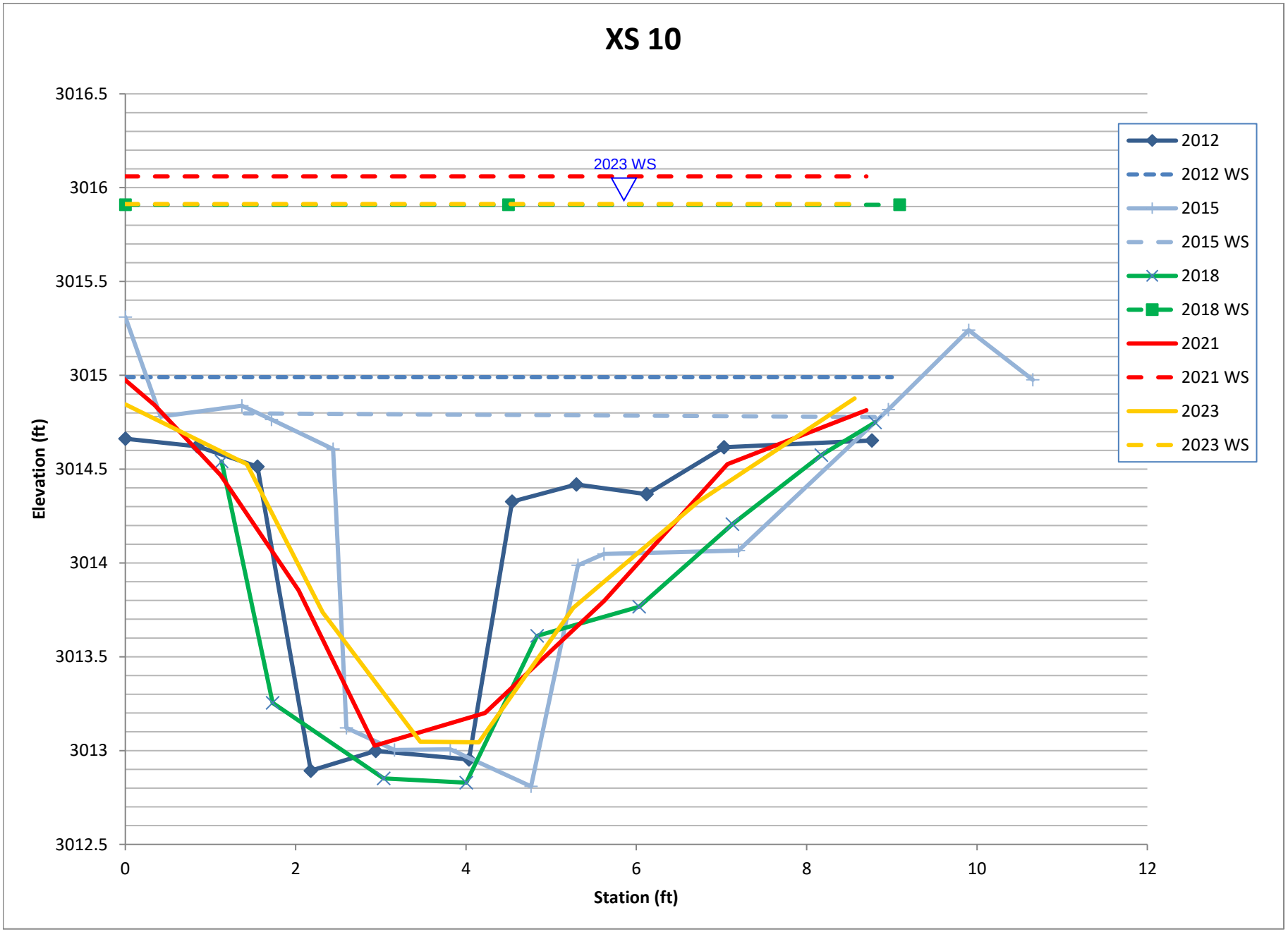

XS 5
2023 WS
3017.5
3017
3016.5
3016
3015.5
3015
3014.5
3014
3013.5
Elevation (ft)
0
2
4
6
8
10
12
Station (ft)
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS

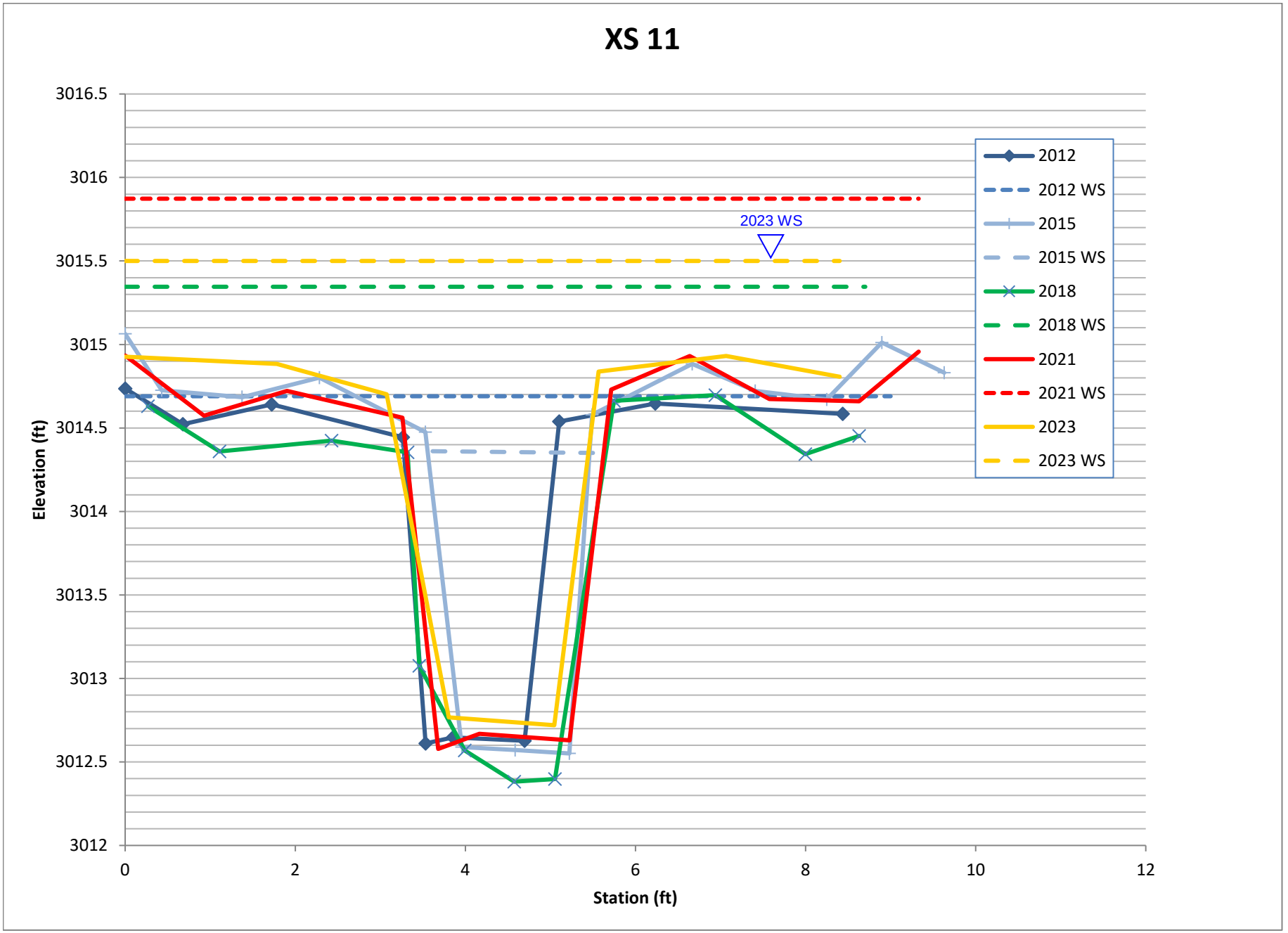

XS 6
2023 WS
3017.5
3017
3016.5
3016
3015.5
3015
3014.5
3014
Elevation (ft)
0
2
4
6
8
Station (ft)
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS


XS 7
2023 WS
3017
3016.5
3016
3015.5
3015
3014.5
3014
3013.5
Elevation (ft)
0
2
4
6
8
10
12
14
Station (ft)
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS


XS 8
3017
3016.5
3016
3015.5
3015
3014.5
3014
3013.5
3013
Elevation (ft)
0
2
4
6
8
10
12
Station (ft)
2023 WS
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS


XS 9
3017
3016.5
3016
3015.5
3015
3014.5
3014
3013.5
3013
3012.5
Elevation (ft)
0
2
4
6
8
10
12
Station (ft)
2023 WS
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS
Log in channel at cross section location preventing 2016, 2017, 2020, 2021, 2022 and 2023 survey of river right channel toe.


XS 10
2023 WS
Elevation (ft)
Station (ft)
3016.5
3016
3015.5
3015
3014.5
3014
3013.5
3013
3012.5
0
2
4
6
8
10
12
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS


XS 11
3016.5
3016
3015.5
3015
3014.5
3014
3013.5
3013
3012.5
3012
Elevation (ft)
0
2
4
6
8
10
12
Station (ft)
2023 WS
2012
2012 WS
2015
2015 WS
2018
2018 WS
2021
2021 WS
2023
2023 WS