SCHRIEBER LAKE MITIGATION SITE

Project Overview

MDT Project Number: NH 27 (029) UPN # 1027007

Watershed: Watershed #1 – Kootenai River Basin

Monitoring Year: 2023

Years Monitored: 9th year of monitoring

Corps Permit Number: NWO-2013-00874-MTM

Stream Protection Act (SPA) Authorization Number: MDT-R1-40-2013

Monitoring Conducted By: Confluence Consulting Inc.

Dates Monitoring Was Conducted: July 10, 2023

Purpose of the Approved Project:

The site was constructed by the Montana Department of Transportation (MDT) from 2014 to 2015 to provide 13.4 acres of compensatory wetland mitigation credits and 36,741.85 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 provide upland buffers around all wetlands. The project restored 1,398 linear feet of the Coyote Creek channel and 2,987 linear feet of the Schrieber Creek channel.

Site Location:

Latitude: 48.106833 **Longitude:** –115.409964

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

Map Included: See Figure 1, page 11

Mitigation Site Construction Started: Summer/2014 **Construction Ended:** Spring/2015

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

Activity: Weed Spraying **Date:** June 28 - July 1, 2021. No weed spraying was conducted in 2022-2023.

Specific recommendations for any additional corrective actions: The MDT's weed-control program will conduct weed treatments in the Spring of 2024.

Anticipated Wetland Credit Acres: 13.40

Wetland Credit Acres Generated to Date: 14.94

Anticipated Stream Credits: 36,741.87

Stream Credits Generated to Date: 34,349.67

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, banking instrument, or Department of Army (DA) permit conditions)

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

Table 1. Summary of Performance Standards

Wetland Performance Standards			
Performance Standards	**Success Criteria**	**Criteria Achieved Y/N**	**Discussion**
Wetland Characteristics	The three parameter criteria are met for hydrology, vegetation, and soils as outlined in the 1987 Wetland Manual and 2010 Regional Supplement.	Y	Areas that were identified as wetland habitat within the mitigation site meet the three parameter criteria.
Wetland Hydrology	Wetland Hydrology Success will be achieved where wetland hydrology is present as per the technical guidelines for Wetland Hydrology Indicator procedures established within the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (WMVC) (Version 2.0). Soil saturation will be determined based upon Primary and Secondary hydrology indicators as provided in Table 12 of Chapter 3 of the WMVC. The presence of Primary indicators observed during field work will be utilized to make a formal determination as to Hydrologic success within the restored wetland.	Y	Areas that were identified as wetlands met the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (WMVC) (Version 2.0) definition for wetland hydrology.
Hydric Soil	Hydric soil conditions are present or appear to be forming.	Y	Hydric soil characteristics have developed throughout all constructed wetlands.
	Soil is sufficiently stable to prevent erosion.	Y	Disturbed soil is stable and does not exhibit signs of erosion.
	Soil is able to support plant cover.	Y	Plant cover is well established across disturbed soils.
Hydrophytic Vegetation	Combined areal cover of facultative or wetter species is 70 percent or greater.	Y	Areas identified as wetland habitat within the mitigation site support a prevalence of hydrophytic vegetation (OBL, FACW, and FAC) with combined areal cover greater than 70 percent.
	State-listed noxious weeds do not exceed 5 percent absolute cover.	Y	State-listed noxious weeds were less than 5 percent absolute cover within wetland areas in 2023.
	Woody plants exceed 50 percent survival after 5 years.	N	Woody plant survival remains very low and is not expected to meet this success criteria.
Open Water	The project is intended to provide open water during the spring and early summer within excavated depressions. Open water with emergent, submerged, and/or floating vegetation will, therefore, be considered successful and creditable.	Y	Excavated depressions throughout the entire mitigation area support perennial inundation with an established aquatic macrophyte community.
Upland Buffer	Noxious weeds do not exceed 5 percent cover within upland buffer area.	Y	Noxious weed cover within the upland buffer areas adjacent to Schrieber and Coyote Creek was estimated at 4 percent and 3 percent, respectively.
	Any area that was 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 cover by non-weed species. Predominately non-native grass species dominated the upland buffer area. Total aerial cover of vegetation was estimated to be between 80 and 85 percent.

Weed Control	Weed control will be based on annual site monitoring to determine weed species and the degree of infestation within the site. Control measures based on the monitoring results will be implemented by Montana Department of Transportation (MDT) to minimize and/or eliminate the intrusion of state-listed noxious weed species within the site.	Y	State-listed noxious weed species have been identified and mapped during the 2023 monitoring event for weed control efforts in 2024. MDT's weed-control contractor is scheduled to treat this site in the Spring of 2024 as part of an ongoing weed control program.

Stream Performance Standards				
Performance Standards	**Success Criteria**	**Criteria Achieved Y/N**		**Discussion**
		SC[a]	**CC[b]**	
Bank Restoration Success	Ratings for the streambank will be based on the Proper Functioning Condition (PFC) rating that determines if the area supports a healthy, stable bank area adjacent to the stream: i) Functioning – The streambank supports a healthy and stable bank area adjacent to the river. ii) Functioning at Risk – one or more functions of the streambank are adjusting to changes in the design within the reach area, and more monitoring is needed. iii) Not Functioning – Measurements of the functions indicate that the site is not achieving functional goals and is not.	N/Y	Y	A PFC assessment was performed during the 2020 monitoring year within three areas of the site (the stream reaches are shown in Figure A-2 in Appendix A). Reach SC1 was rated as Functional – At Risk due to the slower vegetation establishment and areas of bare soil along the bank. See the Stream Monitoring section of this report for additional details and the 2020 PFC assessment in Appendix B of the 2020 monitoring report.
Riparian Buffer Success	Creditable buffer areas must have at least 50 percent areal cover of non- weed species by the end of the monitoring period.	Y	Y	All riparian vegetation transects exhibited 50 percent or greater areal cover of non-weed species along both Schrieber and Coyote Creeks.
	Combined areal cover of riparian and streambank vegetation communities is 70 percent or greater.	Y	Y	Combined areal cover of riparian and streambank vegetation along Coyote Creek and Schrieber Creek was estimated at 90 percent.
	Noxious weeds do not exceed 5 percent cover within the riparian buffer areas.	Y	Y	Noxious weed cover within riparian buffer areas adjacent to Schrieber and Coyote Creeks was estimated at 3 percent and less than 1 percent, respectively.
	Planted trees and shrubs will be considered successful where they exhibit 50 percent survival after 5 years.	N	N	Planted trees and shrubs along Schrieber Creek and Coyote Creek exhibited less than 1 percent survival in 2023.

Coyote and Schrieber Creek Channel Restoration Success	**Success** will be evaluated in terms of re-vegetation success. For the purpose of identification, bank areas extend three to five feet (5 ft.) from the Ordinary High Water (OHW) mark up the bank and is dependent upon whether it is on banks of Coyote (3 ft) or Schrieber Creek (5 ft). a. Re-vegetation along the new Coyote and Schrieber Creek channel corridor will be considered successful when the bank area becomes vegetated with a majority of deep-rooting riparian plant species having root stability indexes ≥ 6 (subject to 4.a and 4.b below). This includes the development of a plant list of the species occurring along the bank areas, which will be compared with the plant stability rating tables from Winward, A. 2000, "Monitoring the Vegetation Resources in Riparian Areas"; and Pick, T. et.al. 2004, Riparian Assessment: Using the NRCS Riparian Assessment Method (See Appendix D). b. New stream channels will be allowed to naturally migrate within the established floodplain/riparian areas and to give it enough room to move and stabilize itself within the site.	Y/N	Y	Reach 1 of Schrieber Creek has yet to fully meet the performance criteria established for the development of deep-rooted vegetation within the riparian corridor. The ephemeral nature of this reach results in slower vegetation growth. As a result, Reach 1 of Schrieber Creek has not met all success criteria and is, therefore, generating half of the anticipated credits. Reaches 2A, 2B, 3, and 7 of Schrieber Creek and Reaches 1A and 1B of Coyote Creek currently meet all success criteria and have generated the predicted credits outlined in the monitoring plan.

(a) SC = Schrieber Creek.

(b) CC = Coyote Creek.

Summary Data

Wetland Delineation –The total jurisdictional wetland and aquatic habitat, which includes wetlands, open water, and streams at the Schrieber Lake mitigation site in 2023, was 55.65 acres, an increase of 0.12 acres since 2022 (Table 2; see maps in Appendix A). Total delineated wetlands, which includes MDT wetlands, USFS wetlands, and riparian buffers decreased by 0.25 acre to 42.08 acres in 2023 (Table 2; see maps in Appendix A). 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." Open water accounted for 12.57 acres of the site, including areas within Cells 1-10 and the preservation area northwest of Schrieber Lake (4.62 acres), Schrieber Lake (7.58 acres), and Schrieber Lake located on USFS property (0.37 acre).

The extensive wetland development at this site results from excavating wetland cells, constructing channel plugs, and restoring meanders and bed elevations for the Schrieber and Coyote Creek channels. Beaver activity, noted for the first time in 2019, is contributing to a shift in wetland development at the site. The beaver dam constructed at the outlet of Schrieber Lake has created perennial inundation across the site and changed the site's hydrologic regime, resulting in an expansion of perennial deepwater inundation observed within wetland vegetation communities. Initially, the beaver dam increased open water within the site, accounting for 14.24 acres in 2020. However, native floating and emergent vegetation has begun to establish within the open water areas, especially within cells 1-10, reducing open water to 12.57 acres in 2023.

Table 2. Upland, Wetland, & Aquatic Habitat Acreage Delineated From 2015 and 2019-2023

Habitat Type	2015 Acres	2019 Acres	2020 Acres	2021 Acres	2022 Acres	2023 Acres
Uplands	52.6	52.6	49.47	49.12	49.17	49.05
Wetlands						
USFS wetlands (no credit)	1.25	1.25	1.66	1.66	1.66	1.63
MDT wetlands	37.65	37.65	34.43	35.43	36.77	36.55
Riparian Buffer (no wetland credit)	3.90	3.90	3.90	3.90	3.90	3.90
Total Delineated Wetlands	**42.84**	**42.84**	**39.99**	**40.9**	**42.33**	**42.08**
Open Water						
Schrieber Lake* (no credit)	8.26	8.26	8.00	8.00	8.00	7.58
Schrieber Lake on USFS property* (no credit)	--	--	--	--	--	0.37
Open Water* (Cells 1-10 & Preservation Area northwest of Schrieber Lake)	N/A	N/A	6.24	5.68	4.20	4.62
Total Open Water	**8.26**	**8.26**	**14.24**	**13.68**	**12.20**	**12.57**
Streams						
Schrieber & Coyote Creeks (no wetland credit)	1.00	1.00	1.00	1.00	1.00	1.00
Total Wetland and Aquatic Habitat	**52.1**	**52.1**	**55.23**	**55.58**	**55.53**	**55.65**
Project Area	104.70	104.70	104.70	104.70	104.70	104.70

*Schrieber Lake and other 'Open Water' areas all meet the USACE definition of open water and are shown as Open Water in Figures A-3 and A-5 in Appendix A.

Vegetation – A total of 120 plant species have been identified at the site from 2015 through 2023, with one new wetland species identified during the 2023 monitoring event. Four wetland, five upland, and one open water community type were identified and mapped at the mitigation site in 2023 (Figure A-3, Appendix A). Dominant plant species observed within each community are listed on the Wetland Mitigation Site Monitoring form (Appendix B). Wetland Types (WT) 4 – *Carex simulata/Persicaria amphibia* was absorbed into WT 8 – *Carex* spp. due to the species composition of both WTs converging in species composition. In addition, WT 6 - *Salix bebbiana/Phalaris arundinacea* was also absorbed into WT 8 because *Salix bebbiana* in WT 6 has been drowned out due to the recent high-water levels, and the species composition in this area is now dominated by *Carex* spp. Finally, Wetland Type 2 - *Betula pumila/Rhamnus alnifolia* was converted into WT 15 - *Betula pumila*/*Salix* spp. because Rhamnus *alnifolia* has been downed out and no longer occurs in the community. The vegetation community types, including one open water community type, identified on the site in 2023 include the following:

- Upland Type 1 – *Elymus repens/Bromus inermis*
- Upland Type 5 – *Pseudotsuga menziesii/Larix occidentalis*
- Upland Type 9 – *Crataegus douglasii/Symphoricarpos albus*
- Upland Type 13 – *Alopecurus* spp./*Phalaris arundinacea*
- Upland Type 14 – *Alopecurus pratensis*
- Wetland Type 3 – *Phalaris arundinacea/Carex* spp.
- Wetland Type 8 – *Carex* spp.
- Wetland Type 10 – *Typha latifolia*
- Wetland Type 15 - *Betula pumila/Salix* spp.

- Open Water Type 11 – Open Water/Aquatic macrophytes (considered open water, not classified as an emergent vegetation community type)

A notable shift in species cover and dominance due to the active beaver dam impounding surface water continued in 2023. Inundation levels within the wetlands averaged 1.5-2.5 feet, slightly lower than observed in 2022. The increase in inundated acreage since the creation of the beaver dam has reduced the overall coverage of reed canary grass (RCG) and broken up the former monoculture, which has allowed for the increase in native herbaceous species such as *Carex* spp. and water smartweed (*Persicaria amphibia*). Because of this transition, much of WT 3 - *Phalaris arundinacea/Carex* spp. was supplanted by WT 8 – *Carex* spp. Extended periods of flooding have been shown to reduce non-native RCG cover, germination, and rhizome production effectively (Jenkins et al. 2008; WRCGM 2009; Waggy 2010), which supports a greater diversity of native vegetation. However, the increase in inundation has reduced the cover of native shrubs, especially in the Wetland Type 2 - fen-carr shrubland and WT 6 - *Salix bebbiana/Phalaris arundinacea,* which are no longer present.

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. In 2023, a reduction in RCG, an increase in *Carex* spp., and an increase in perennial surface water were observed within the wetland communities, continuing the same trend observed since the beaver dam was created. Although open water expanded slightly from 12.20 to 12.57 acres in 2023, open water acreage is significantly less than when the beaver dam was first constructed. Surface water levels amongst the other vegetation communities were slightly lower during the 2023 monitoring event than in 2022.

Perennial surface water observed within the wetland vegetation communities along all three transects (i.e., Wetland Types 3 and 8) that exhibited greater than 5% emergent vegetation and were too small (i.e., less than 0.1-acre in size) were classified as a hydrophytic vegetation community and not as open water. In Tables 3 through 5, the "% transect length comprising open water" summarizes the length of the transect occupied by Open Water Type 11 and does not include perennial surface water observed within wetland plant communities along the transects. Instead, because 0.5-3 feet of surface water covered all unvegetated areas along the transects at the Schrieber Lake site, the "estimated % unvegetated Surface Water" value is analogous to perennial surface water within the wetland communities found along the transects, which is not to be confused with open water.

Table 3 summarizes the data for T-1 from 2016 through 2023. T-1 is 284 feet long and intersects WT 3 and 10. Much of this transect used to traverse WT 3, but in 2023, a species composition shift replaced WT3 with WT 10- *Typha latifolia*. Hydrophytic vegetation cover accounted for 60 percent of the transect in 2023, the same as in 2022. Unvegetated surface water, 0.5-2.5 feet deep, accounted for the remaining 40 percent of the transect in 2023.

Table 4 summarizes the data for T-2 from 2016 through 2023. T-2 is 280 feet long and traversed WT 8. In 2022, this transect intercepted both WT 3 and 6, but a reduction in RCG and *Salix bebbiana* caused this area to transition to WT 8 – *Carex* spp. Hydrophytic vegetation communities accounted for 100 percent of the transect in 2023. Hydrophytic vegetation cover accounted for 80 percent of the transect in 2023, the same as in 2022. Unvegetated surface water, 2-2.5 feet deep, accounted for the remaining 20 percent of the transect in 2023.

Table 3. Data Summary for T-1 From 2016 Through 2023 at the Schrieber Lake Site

Monitoring Year	2016	2017	2018	2019	2020	2021	2022	2023
Transect Length (feet)	**284**	**284**	**284**	**284**	**284**	**284**	**284**	**284**
Vegetation Community Transitions Along Transect	3	3	3	3	2	2	2	2
Vegetation Communities Along Transect	3	3	3	3	1	1	1	2
Hydrophytic Vegetation Communities Along Transect	3	3	3	3	1	1	1	2
Total Vegetative Species	9	10	9	7	7	6	7	8
Total Hydrophytic Species	8	9	9	7	7	6	6	8
Total Upland Species	1	1	0	0	0	0	0	0
Estimated % Total Vegetative Cover	100	100	100	100	97	75	60	60
Estimated % Unvegetated Surface Water	0	0	0	0	3	25	40	40
% Transect Length Comprising Hydrophytic Vegetation Communities	100	100	100	100	97.2	97.2	97.2	100
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0	0	0	0	0
% Transect Length Comprising Open Water	0	0	0	0	2.8	2.8	2.8	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0	0	0

Table 4. Data Summary for T-2 From 2016 Through 2023 at the Schrieber Lake Site

Monitoring Year	2016	2017	2018	2019	2020	2021	2022	2023
Transect Length (feet)	**280**	**280**	**280**	**280**	**280**	**280**	**280**	**280**
Vegetation Community Transitions Along Transect	1	1	1	1	1	1	1	1
Vegetation Communities Along Transect	2	2	2	2	2	2	2	1
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2	2	2	1
Total Vegetative Species	5	6	6	6	6	6	7	5
Total Hydrophytic Species	5	6	6	6	6	6	7	5
Total Upland Species	0	0	0	0	0	0	0	0
Estimated % Total Vegetative Cover	100	100	100	100	95	85	80	80
Estimated % Unvegetated Surface Water	0	0	0	0	5	15	20	20
% Transect Length Comprising Hydrophytic Vegetation Communities	100	100	100	100	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0	0	0	0	0
% Transect Length Comprising Open Water	0	0	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0	0	0

Table 5 summarizes the data for T-3 from 2016 through 2023. T-3 is 584 feet long and intersects WTs 3 and 8. Hydrophytic vegetation communities accounted for 100 percent of the transect in 2023. Hydrophytic vegetation cover decreased from 85 to 80 percent of the transect in 2023 due to the perennial inundation present along the transect. Unvegetated surface water, 0.5-2 feet deep, accounted for the remaining 20 percent of the transect in 2023.

Table 5. Data Summary for T-3 From 2016 Through 2023 at the Schrieber Lake Site

Monitoring Year	2016	2017	2018	2019	2020	2021	2022	2023
Transect Length (feet)	**584**	**584**	**584**	**584**	**584**	**584**	**584**	**584**
Vegetation Community Transitions Along Transect	2	2	2	2	1	1	1	1
Vegetation Communities Along Transect	3	3	3	3	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2	2	2	2
Total Vegetative Species	11	10	12	9	6	6	6	6
Total Hydrophytic Species	10	8	10	7	6	6	6	6
Total Upland Species	1	2	2	2	0	0	0	0
Estimated % Total Vegetative Cover	100	100	100	100	95	90	85	80
Estimated % Unvegetated Surface Water	0	0	0	0	5	10	15	20
% Transect Length Comprising Hydrophytic Vegetation Communities	94	94	94	97	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	6	6	6	3	0	0	0	0
% Transect Length Comprising Open Water	0	0	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0	0	0

One Priority 2A noxious weed species, orange hawkweed (*Hieracium aurantiacum*), was found during the site visit. Priority 2B noxious weeds identified and mapped within the Schrieber Lake mitigation site included spotted knapweed (*Centaurea stoebe*), Canada thistle (*Cirsium arvense*), butter-and-eggs (*Linaria vulgaris*), orange hawkweed (*Hieracium aurantiacum*), ox-eye daisy (*Leucanthemum* vulgare), St. Johnswort (*Hypericum perforatum*), and field bindweed (*Convolvulus arvensis*). The most common noxious weed species observed on site was Canada thistle (Figure A-3, Appendix A). MDT's last weed control efforts at this site were in June/July 2021 and will continue in the Spring of 2024.

MDT planted 1,500 woody plants in the riparian buffer along Schrieber Creek, Coyote Creek, and around some excavated wetland cells. Based on observations at the parallel and perpendicular belt transects, woody planting survival was estimated well below the required 50 percent survival. Woody survival is inhibited by competition with herbaceous vegetation, perennial inundation or extremely saturated soil conditions, herbivory by ungulates and rodents, and previous herbicide applications on adjacent noxious weed infestations. No natural recruitment of woody plants has been observed within the site's wetlands due to inundation. However, some natural recruitment of willows has occurred within Schrieber Creek, where willow coverage within the channel is less than 5 percent.

Hydrology – During the 2023 investigation, the average surface water depth across the entire site was estimated at 1.5 feet, with a range of depths from 0.1 to 5 feet. The deepest standing water is located within the excavated cells, creek channels and Schrieber Lake. Approximately 85 percent of the wetlands were inundated during the 2023 site visit. The surface-water depth at the emergent vegetation and open-water boundary was estimated at 2.0 feet. In 2023, the beaver dam initially documented in 2019 at the outlet of Schrieber Lake was still present and impounding water. However, in 2023, there were no signs of fresh beaver activity such as chewed sticks, freshly placed mud, or beaver tracks, leading the investigators to believe the beaver dam is no longer being maintained by an active beaver colony. Schrieber Lake represented 7.95 acres of open water while the wetland cells represented 4.62 acres of open water habitat during the 2023 monitoring event. These areas are depicted as Open Water Type 11 in Figure A-3 in Appendix A.

Most wetlands exhibited standing surface water in 2023 as in 2022. The average water depths across the site decreased slightly from 2022, as evidenced by the surface water elevations collected during the stream cross-section survey (Appendix D). The distinct topographic break between upland and wetland habitat at the site has primarily resulted in an increase in inundation depths within existing wetlands

rather than an expansion of surface area inundation and newly created wetland habitat. The changes in plant community composition and wetland/open water habitat observed in 2023 are directly correlated to the perennial surface water present across the site. Continued shifts in vegetation and an increase in wetland/open water habitat are expected if the beaver dam persists and water levels remain high.

Soils – Soil test pits were excavated at 19 locations to evaluate the extent of hydric soil development across the site in 2023 (Appendices A and B). Wetland test pits were characterized by soil textures ranging from loamy sand to peat. Soil textures within upland test pits ranged from sandy loam to clay loam. No hydric soil indicators were observed in the upland test pits. Additional field observations for the 19 data points are provided in the wetland determination data forms in Appendix B.

Functional Assessment – The 2008 Montana Wetland Assessment Method (MWAM) was used to evaluate the site in 2023 (Appendix B). The Assessment Area (AA) includes all delineated wetlands, including the creditable wetlands (36.55 acres), wetlands within the riparian buffers of Schrieber and Coyote Creeks (3.90 acres), Schrieber Lake and remaining open water areas (12.57 acres), portions of Schrieber and Coyote Creeks that flow through the wetland areas (1.00 acres), and the wetlands on US Forest Service (USFS) lands (1.63 acres). The wetlands in the AA received a Category I rating with 93% of the total possible points in 2023. They were rated as exceptional for General Wildlife Habitat and Production Export/Food Chain Support and high for all other functions and values except General Fish/Aquatic Habitat and Flood Attenuation, which were rated as moderate (Table 6).

Table 6. Montana Wetland Assessment Method Summary for Schrieber Lake

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2015 Entire Site	2023 Entire Site
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	High (0.8)	High (0.8)
Montana Natural Heritage Program Species (MTNHP) Habitat	Mod (0.6)	High (0.9)
General Wildlife Habitat	Exc (1.0)	Exc (1.0)
General Fish/Aquatic Habitat	Mod (0.7)	Mod (0.7)
Flood Attenuation	Mod (0.6)	Mod (0.6)
Short- and Long-Term, Surface-Water Storage	High (1.0)	High (1.0)
Sediment/Nutrient/Toxicant Removal	High (1.0)	High (1.0)
Sediment/Shoreline Stabilization	High (1.0)	High (1.0)
Production Export/Food Chain Support	High (1.0)	High (1.0)
Groundwater Discharge/Recharge	High (1.0)	High (1.0)
Uniqueness	High (0.9)	High (1.0)
Recreation/Education Potential (bonus points)	Mod (0.1)	High (0.2)
Actual Points/Possible Points	**9.7/11**	**10.2/11**
% of Possible Score Achieved	**88.2%**	**93%**
Overall Category	**I**	**I**

Wildlife – Twenty-one bird species were identified in 2023 at the Schrieber Lake site. In addition to the 21 bird species, 6 northern Columbia spotted frogs, 4 white-tailed deer, 2 Richardson's ground squirrels, and one elk carcass with possible wolf scat adjacent to the carcass were observed (Appendix B).

Photographs – Ten photo points were initially established in the project area in 2015. Photographs were taken at all ten photo point locations during the 2023 site visit. In addition to established photo points, photographs were taken at each surveyed stream cross-section, sampled data points, and vegetation transect endpoints. These photographs' locations are illustrated in Figure A-2 (Appendix A) and the photographs in Appendix C. Previous years' site photographs associated with annual Schrieber Lake

Wetland Mitigation monitoring reports can be found at this website: (https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx).

Stream Monitoring – The survey results for 11 permanent cross sections that were established along the constructed Coyote and Schrieber Creeks (Figure A-2, Appendix A) are shown in Appendix D. The 2023 data were evaluated against the previous surveys to assess stream channel stability. In 2023, the banks of the constructed channels exhibited stable conditions and were generally well-vegetated with deep-rooted plant species, except for Schrieber Creek Reach 1 (SC1). The stream monitoring survey indicates that little to no significant channel morphological changes occurred between 2022 and 2023. The nine cross-sections within the 2023 wetland boundary exhibited surface water elevations lower than or equal to those surveyed in 2022. Surface water elevations across the rest of the transects decreased by 0.2 to 0.7 feet.

The 2020 PFC assessment rated all stream reaches at the site as ***Functioning***, with the exception of Schrieber Creek Reach 1 (SC1), which was rated as ***Functional – At Risk*** due to slower vegetation establishment, a dominance of shallow-rooted species, and areas of bare soil observed along the banks. In 2023, some willows were observed establishing within the stream channel, although their cover totaled less than 5 percent. Vegetation cover was otherwise consistent with 2022 observations, which included a dominance by shallow-rooted spreading bent (*Agrostis stolonifera*) and (*Elymus repens*) creeping wild rye and minimal cover from deep-rooted species such as RCG. This reach has an upward trend, with the surrounding vegetation community transitioning to a more mesic species composition that includes the deep-rooted RCG, willows, and increased vegetation cover observed in 2023 and expected to continue over time.

Credit Summary – ***Stream Credits***

The goal of the stream mitigation component of the Schrieber Lake project includes the restoration of approximately 2,130 linear feet of Schrieber Creek, 1,397 feet of Coyote Creek, and 978 feet of Schrieber Creek below the new Schrieber/Coyote Creek confluence. When combined with the establishment of a riparian buffer of varying widths on both sides of the restored channels, the project is expected to generate a total of 36,741.87 stream and riparian credits, as shown in Table 7.

Data collected during the 2023 monitoring event revealed continued development of vegetation cover along the stream reaches. Reach 1 of Schrieber Creek has yet to fully meet the performance criteria established for the development of deep-rooted vegetation within the riparian corridor. The ephemeral nature of this reach results in slower vegetation growth. As a result, Reach 1 of Schrieber Creek has not met all success criteria and is, therefore, generating half of the anticipated credits. Reaches 2A, 2B, 3, and 7 of Schrieber Creek and Reaches 1A and 1B of Coyote Creek meet all success criteria and have generated the predicted credits outlined in the monitoring plan. Future monitoring will continue to assess the vegetation establishment within Reach 1 of Schrieber Creek and its status in meeting the success criteria and generating the anticipated stream mitigation credits. The site has generated 34,349.67 stream credits, which is 2,392.20 credits less than the original projection.

Table 7. 2023 Riparian and Stream Mitigation Credits for the Schrieber Lake Site

Channel Segment	Reach	Side	Predicted Credits	2023 Credits
Coyote Creek	1A	A	4,141.63	4,141.63
		B	4,141.63	4,141.63
	1B	A	1,586.25	1,586.25
		B	1,692.00	1,692.00
Schrieber Creek	1	A	2,392.20	1,196.1
		B	2,392.20	1,196.1
	2A	A	2,722.50	2,722.50
		B	2,722.50	2,722.50
	2B	A	576.65	576.65
		B	576.65	576.65
	3	A	3,964.83	3,964.83
		B	3,964.83	3,964.83
	7	A	2,934.00	2,934.00
		B	2,934.00	2,934.00
Total			**36,741.87**	**34,349.67**

Credit Summary – Wetland Credits

MDT anticipates generating 13.4 wetland credit acres from the Schrieber Lake project. Proposed mitigation credits from the 2014 Schrieber Lake Mitigation Plan included establishing 3.06 wetland acres, re-establishing 2.53 wetland acres, enhancing 4.53 acres of the fen-carr shrubland expansion, preserving 25.6 acres of existing Fen-Carr *Carex* areas, and creating a 50-foot upland buffer (3.81 acres) around newly established wetlands in the center of the site. Table 8 summarizes the estimated wetland credits based on the pending USACE-approved credit ratios and the wetland delineation completed in July 2023. The 2023 wetland delineation identified 36.55 acres of creditable wetlands and 4.62 acres of creditable 'open water' within the mitigation site.

Creditable wetland acreage included 5.72 acres of established wetlands, 1.27 acres of re-established wetlands, 4.77 acres of enhanced wetlands, and 24.79 acres of preserved wetlands, with 3.01 acres of upland buffer around the perimeter of the delineated wetland. Following 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. Creditable open water acreage included 2.24 acres of created open water, 1.15 acres of restored open water, and 1.23 acres of preserved open water. Schrieber Lake has never received mitigation credit at this site and is therefore excluded from Table 8. This site's 2023 estimated credit acres have exceeded the proposed credit acres. To date, 14.94 credit acres have been developed at this site. Figure A-4 (Appendix A) shows the location of wetlands based on credit type.

Table 8. Summary of Wetland Mitigation Credits at the Schrieber Lake Site in 2015 and 2021 through 2023

Mitigation Type	Total Proposed Acreage	Ratio	Proposed Credit Acres	2015 Delineated Acreage	2015 Credit Acres	2021 Delineated Acreage	2021 Credit Acres	2022 Delineated Acreage	2022 Credit Acres	2023 Delineated Acres	2023 Credit Acres
Establishment (Creation)	3.06	1:1	3.06	4.80	4.80	5.06	5.06	5.60	5.60	5.72	5.72
Establishment (Creation) 'Open Water'[(b)]	--	TBD	--	--	--	2.54	TBD	2.30	TBD	2.24	TBD
Restoration (Re-establishment)	2.53	1.5:1	1.69	2.42	1.62	1.14	0.76	1.10	0.73	1.27	0.85
Restoration 'Open Water' [(b)]	--	TBD	--	--	--	1.28	TBD	1.32	TBD	1.15	TBD
Enhancement areas- Carr Shrubland expansion	4.53	3:1	1.51	4.77	1.59	4.69	1.56	4.69	1.56	4.77	1.59
Enhancement 'Open Water' [(b)]	--	TBD	--	--	--	0.08	TBD	--	--	--	--
Preservation-Existing Fen-Carr-Carex Areas	25.60	4:1	6.40	25.66	6.42	24.46	6.12	25.38	6.35	24.79	6.20
Preservation 'Open Water' [(b)]	--	TBD	--	--	--	1.61	TBD	0.58	TBD	1.23	TBD
Upland Buffer (50 feet)[(a)]	3.81	5:1	0.76	8.42	1.68	3.81	0.76	2.94	0.59	3.01	0.60
Permanent Project Impacts	0.02	None	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Total Mitigation Acreage	**39.51**	--	**13.40**	**46.05**	**16.09**	**44.65**	**14.24**	**43.89**	**14.81**	**44.16**	**14.94**

(a) Acreage includes 50-foot buffer around a portion of the perimeter of delineated wetlands within MDT property and outside of the riparian buffer according to the wetland mitigation plan.

(b) Creditable Open Water acreage is separated into Creation, Restoration, and Preservation Open Water Mitigation Area Types. Mitigation ratios and crediting for Open Water are To Be Determined (TBD) – see USACE approved performance standard for Open Water (Table 1).

Functional Unit Credits Summary – The 2023 functional unit credits summary is summarized in Table 9. A total of 145.25 functional unit credits were generated at the Schrieber Lake site after applying the appropriate mitigation ratios to the 2023 wetland acreage and multiplying that value by the points generated from the 2023 MWAM Assessment.

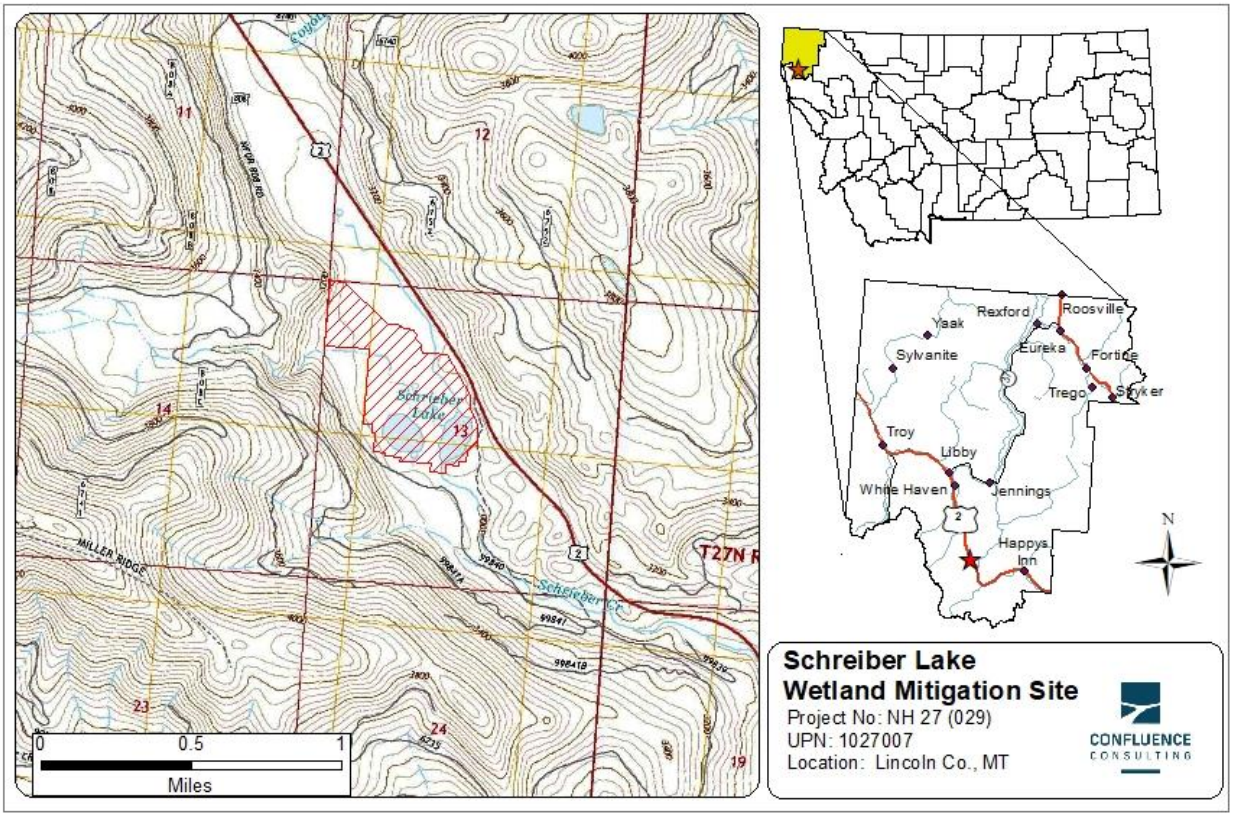
Table 9. Functional Unit Credits Summary for Schrieber Lake

Mitigation Type	2023 Delineated Acreage	Ratio	2023 Mitigation Credit Acres	MWAM Actual Points[a]	Functional Unit Credits
Establishment (Creation)	5.72	1:1	5.72	10.20	58.34
Establishment (Creation) 'Open Water'	2.24	TBD	TBD	10.20	TBD
Restoration (Re-establishment)	1.27	1.5:1	0.73	10.20	7.45
Restoration 'Open Water'	1.15	TBD	TBD	10.20	TBD
Enhancement areas- Carr Shrubland expansion	4.77	3:1	1.59	10.20	16.22
Preservation-Existing Fen-Carr-Carex Areas	24.79	4:1	6.20	10.20	63.24
Preservation 'Open Water'	1.23	TBD	TBD	10.20	TBD
Functional Unit Credits (Mitigation Credit Acres × Actual Points)					**145.25**

[a]Montana Wetland Assessment Method (MWAM) forms can be found in Appendix B

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 Credit Areas; Figure A-5 – 2023 Wetland Delineation)

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

Plant List: See Table B-1 in Appendix B

Photos: See Appendix C

Plans: See Appendix D of the 2015 Schrieber Lake Wetland Mitigation Monitoring Report at this website**:** **https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx**

Conclusions

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

1. Planted trees and shrubs will be considered successful when they exhibit 50 percent survival after 5 years.
2. Bank Restoration Success (only along Reach SC-1 of Schrieber Creek).

Woody plant survival is not expected to meet the established performance standard. Reach SC-1 along Schrieber Creek is an ephemeral reach that is taking longer for deep-rooted vegetation to establish but is expected to meet this success criterion in the future as it is in an upward trajectory based upon annual monitoring. No remedial actions are recommended at this time.

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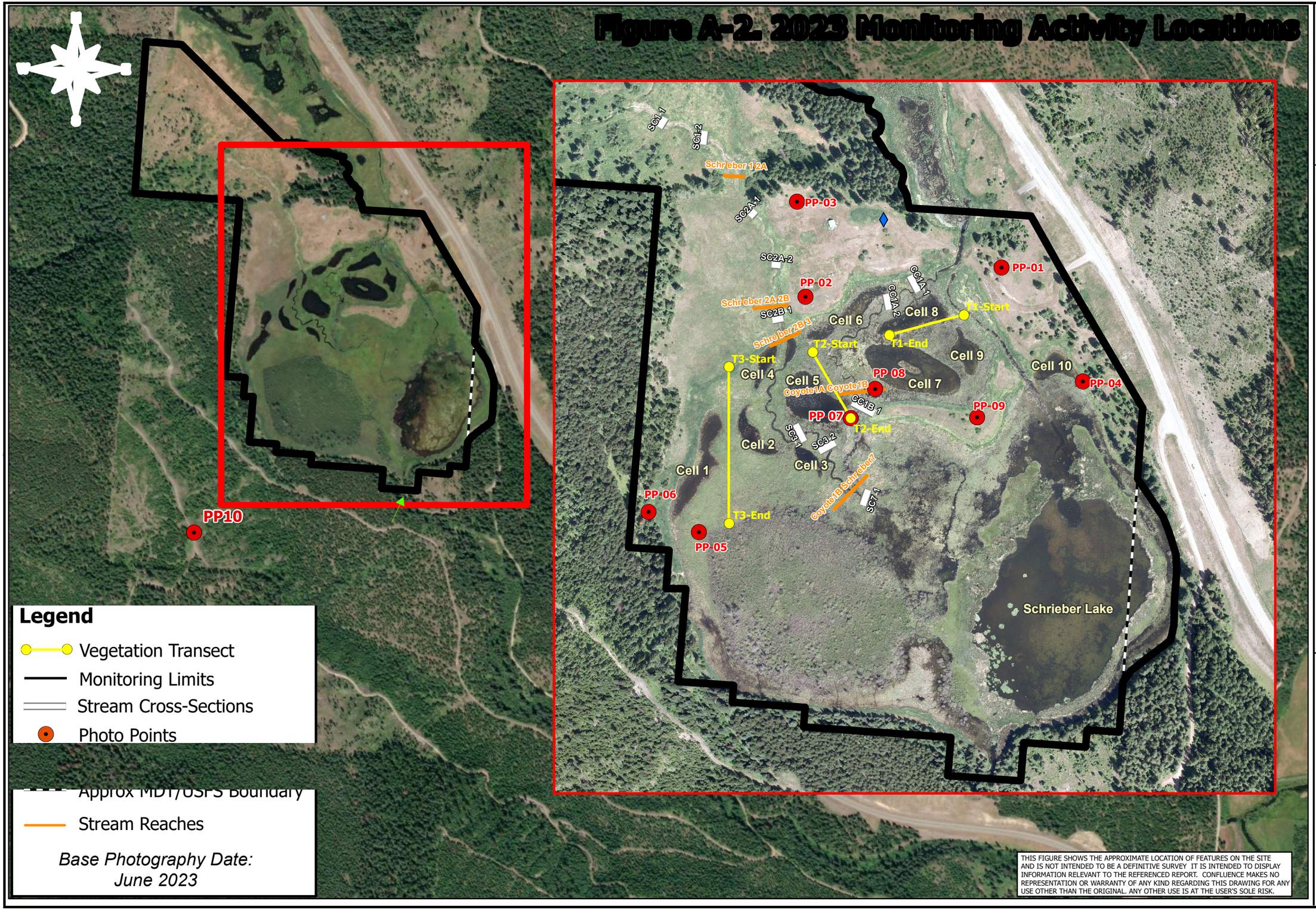
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APPENDIX A
PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

Figure A-2. 2023 Monitoring Activity Locations



Legend

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

Base Photography Date: June 2023

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. CONFLUENCE 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 Lake Mitigation Site
2023 Monitoring Activity Locations

300 150 0 300 600 900 1,200 Feet

Project:	NH 27 (029)
Location:	Lincoln Co., Montana
Date Map Created:	Sept. 2023
Project Manager:	R. McEldowney
Drawn By:	JT

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

Figure A-3. 2023 Mapped Site Features

N
W E
S

Vegetation Community Types

- Stream Channel
- UT-1 Elymus repens/Bromis inermis
- UT-5 Pseudostuga menziesii/Larix occidentalis
- UT-9 Craetagus douglasii/Symphoricarpus alba
- UT-13 Alopecurus spp./Phalaris arundinacea
- UT-14 Alopecurus pratensis
- WT-3 Phalaris arundinacea/Carex sp.
- WT-8 Carex spp.
- WT-10 Typha latifolia/Open Water
- WT-15 Betula pumila/Salix spp.
- OWT-11 Open water/Aquatic macrophytes

Noxious Weeds

Convolvulus arvensis
Cirsium arvense
Centaurea stoebe
Hieracium aurantiacum
Hypericum perforatum
Linaria vulgaris
Leucanthemum vulgare

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

Legend

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

Base Photography Date: June 2023

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. CONFLUENCE 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.

Beaver Dam

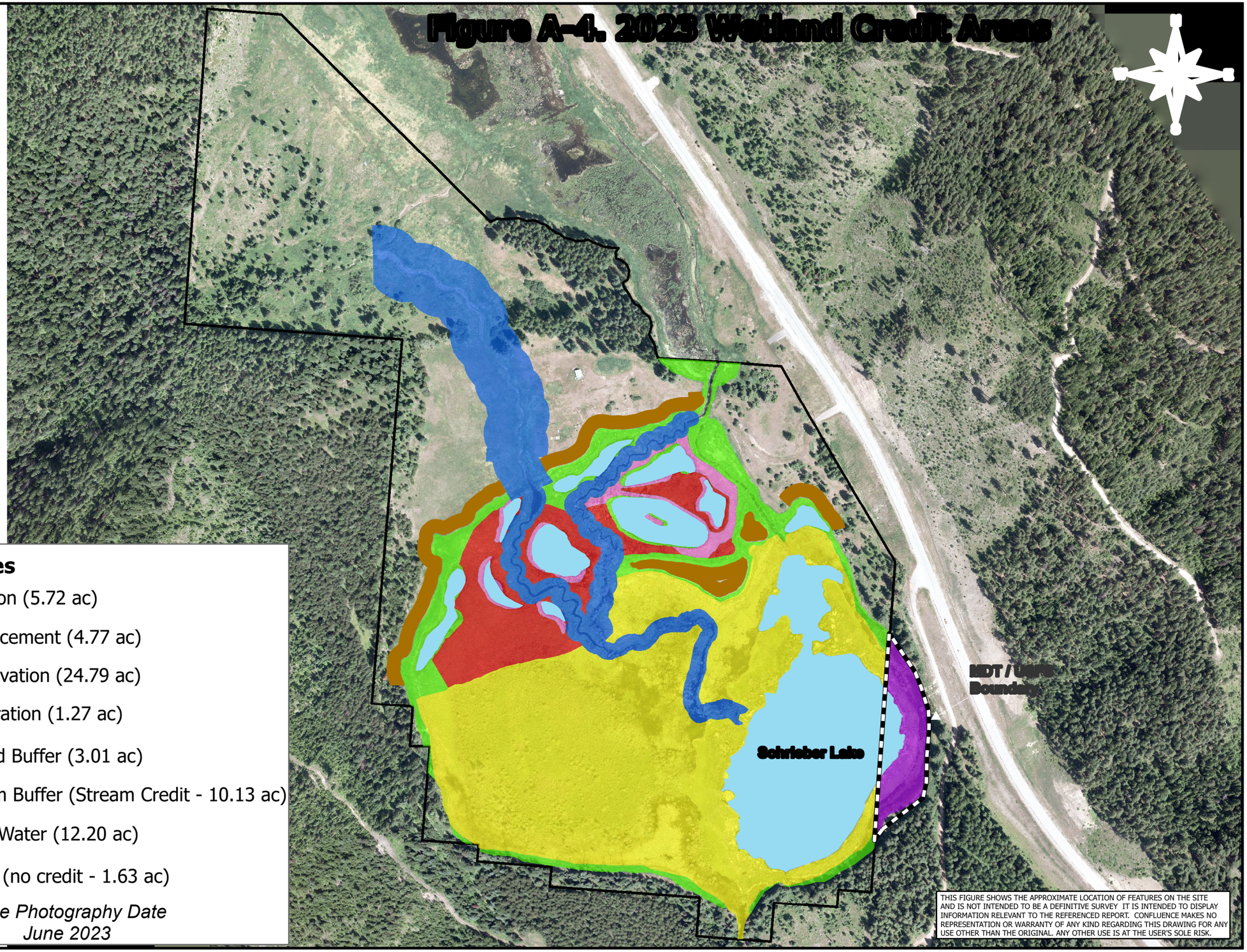
CONFLUENCE CONSULTING

Schrieber Lake Mitigation Site
2023 Mapped Site Features

0 150 300 600 900 1,200 1,500 Feet

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: Sept. 2023
Project Manager: R. McEldowney
Drawn By: JT

Figure A-4. 2023 Wetland Credit Areas



Credit Types

- Creation (5.72 ac)
- Enhancement (4.77 ac)
- Preservation (24.79 ac)
- Restoration (1.27 ac)
- Upland Buffer (3.01 ac)
- Stream Buffer (Stream Credit - 10.13 ac)
- Open Water (12.20 ac)
- USFS (no credit - 1.63 ac)

Base Photography Date
June 2023

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. CONFLUENCE 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

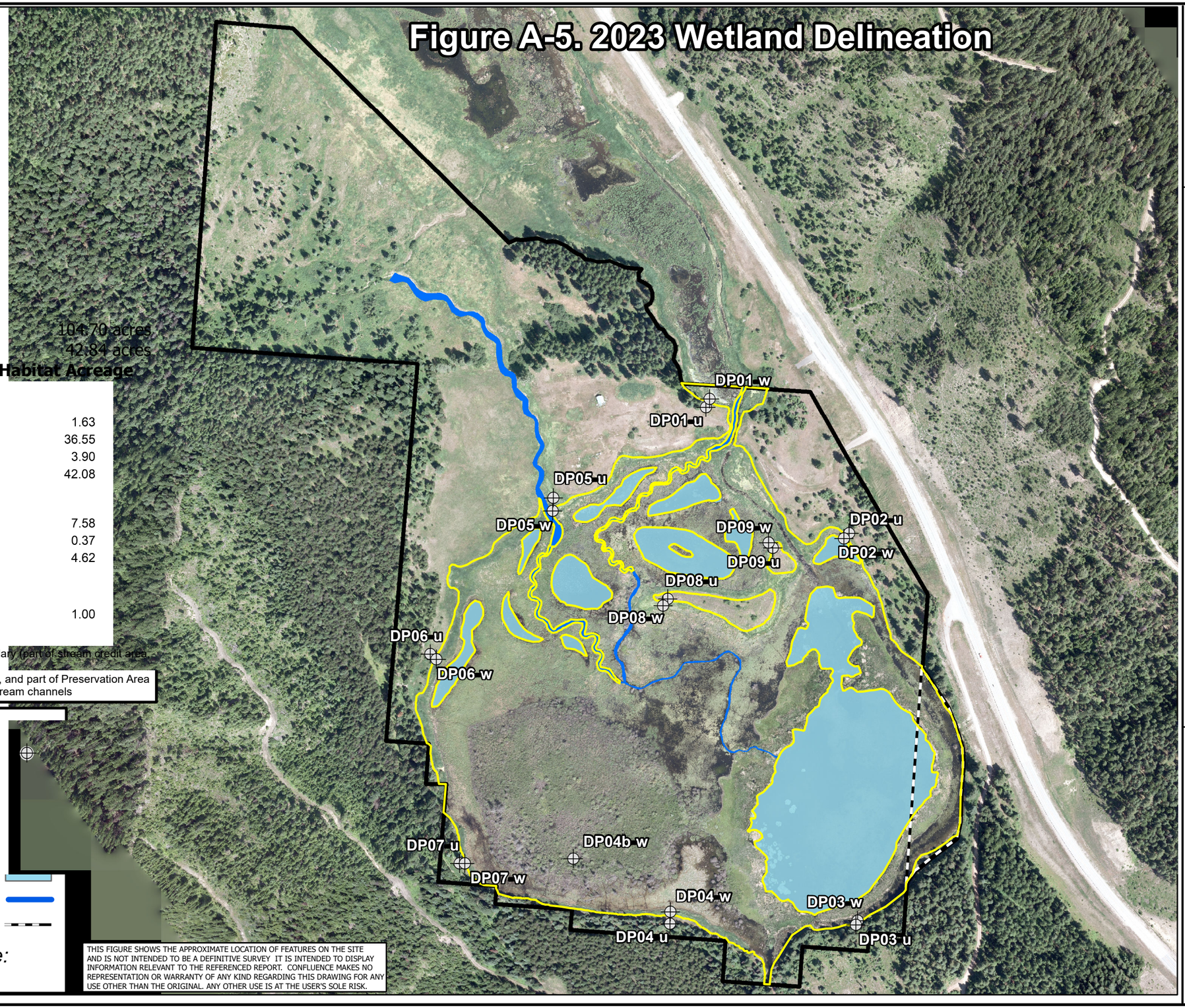
Schrieber Lake Mitigation Site
2023 Wetland Credit Areas

0 150 300 600 900 1,200 1,500 Feet

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: Sept. 2023
Project Manager: R. McEldowney
Drawn By: JT

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Figure A-5. 2023 Wetland Delineation



Project Area 104.70 acres
Pre-Project Wetland 42.84 acres

2023 Wetland and Aquatic Habitat Acreage

Wetlands	
USFS wetlands (no credit)	1.63
MDT wetlands	36.55
Riparian buffer (no wetland credit)	3.90
Total delineated wetlands	42.08
Open Water	
Schrieber Lake (no credit)	7.58
Schrieber Lake (USFS no credit)	0.37
Open Water (cells 1-10)	4.62
Streams	
Schrieber & Coyote Creeks (no wetland credit)	1.00

* Riparian Buffer within Delineated Wetland Boundary (part of stream credit area, no wetland credit received)

**Open Water includes Cells 1-10, Schrieber Lake, and part of Preservation Area northwest of Schrieber Lake, does not include stream channels

Legend

- Data Point
- Monitoring Limits
- Pre-Project Wetland Area
- Wetland Area - 2023
- Open Water - 2023
- Stream Channel
- Approx MDT/USFS Bndry

Base Photography Date: June 2023

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. CONFLUENCE 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 Lake Mitigation Site
2023 Wetland Delineation

0 200 400 800 1,200 1,600 Feet

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: Sept 2023
Project Manager: R. McEldowney
Drawn By: JT

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APPENDIX B
MONITORING FORMS

MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

VEGETATION COMMUNITIES

Site Schrieber Lake

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

Community # 1 **Community Type:** Elymus repens / Bromus spp. **Acres:** 11.52

Species	Cover class	Species	Cover class
Achillea millefolium	1	Agrostis stolonifera	1
Alopecurus arundinaceus	1	Alopecurus pratensis	1
Apocynum androsaemifolium	0	Berberis repens	0
Bromus inermis	3	Bromus tectorum	2
Cirsium arvense	1	Dactylis glomerata	0
Elymus repens	4	Linaria vulgaris	1
Nassella viridula	1	Pascopyrum smithii	3
Phalaris arundinacea	2	Phleum pratense	2
Poa compressa	2	Poa pratensis	1
Pseudoroegneria spicata	1	Pseudotsuga menziesii	1
Symphoricarpos albus	1	Verbascum thapsus	1

Comments:

Upland CT relatively unchanged since 2022.

Community # 3 **Community Type:** Phalaris arundinacea / Carex spp. **Acres:** 6.66

Species	Cover class	Species	Cover class
Agrostis capillaris	1	Alopecurus arundinaceus	1
Alopecurus pratensis	1	Carex aquatilis	2
Carex bebbii	1	Carex lasiocarpa	2
Carex nebrascensis	1	Carex simulata	1
Carex stipata	1	Carex utriculata	3
Carex vesicaria	1	Comarum palustre	1
Deschampsia caespitosa	0	Epilobium ciliatum	1
Geum macrophyllum	0	Juncus filiformis	1
Juncus tenuis	0	Lemna minor	1
Lycopus asper	1	Open Water	2
Persicaria amphibia	1	Phalaris arundinacea	4
Schoenoplectus acutus	0	Scutellaria galericulata	1
Symphyotrichum spathulatum	0	Typha latifolia	1

Comments:

Reed canary grass is continuing to decline in cover with CT 3 significatly decreasing in size in 2023 . The areas previously occupied by reed canary grass are converting to open water, Persicaria amphibia, and Carex species

Community # 5 **Community Type:** Pseudotsuga menziesii / Larix occidentalis **Acres:** 22.6

Species	Cover class	Species	Cover class
Abies grandis	2	Agrostis capillaris	1
Alopecurus arundinaceus	1	Alopecurus pratensis	1
Amelanchier alnifolia	1	Arctostaphylos uva-ursi	2
Berberis repens	1	Bromus inermis	2
Calamagrostis rubescens	2	Campanula rotundifolia	0
Carex geyeri	2	Centaurea stoebe	1
Elymus glaucus	1	Elymus repens	1
Hieracium aurantiacum	2	Larix occidentalis	2
Linnaea borealis	1	Penstemon confertus	0
Picea engelmannii	2	Pinus contorta	2
Pseudotsuga menziesii	3	Rosa woodsii	1
Symphoricarpos albus	2		

Comments:

Upland forested community at edges of wetland boundaries.

Community # 8 **Community Type:** Carex spp. / **Acres:** 16.98

Species	Cover class	Species	Cover class
Carex aquatilis	2	Carex atherodes	1
Carex bebbii	0	Carex lasiocarpa	2
Carex utriculata	3	Carex vesicaria	4
Comarum palustre	1	Lemna minor	1
Open Water	3	Persicaria amphibia	2
Phalaris arundinacea	2	Salix bebbiana	1
Salix candida	1	Scirpus microcarpus	1
Typha latifolia	0		

Comments:

In 2023, this community was inundated with an average of 1.5 feet of ponded water, and increased in size as a result of absorbing CT 4 and 6.

Community # 9 Community Type: Crataegus douglasii / Symphoricarpos albus **Acres:** 0.74

Species	Cover class	Species	Cover class
Achillea millefolium	0	Alopecurus arundinaceus	1
Alopecurus pratensis	2	Cirsium arvense	1
Crataegus douglasii	5	Cynoglossum officinale	0
Dactylis glomerata	0	Elymus trachycaulus	1
Galium triflorum	0	Phalaris arundinacea	2
Symphoricarpos albus	4	Taraxacum officinale	0
Urtica dioica	0		

Comments:

Upland community type in the northern portion of project area.

Community # 10 Community Type: Typha latifolia / Open Water **Acres:** 7.78

Species	Cover class	Species	Cover class
Aquatic macrophytes	1	Carex vesicaria	1
Comarum palustre	2	Lemna minor	1
Myriophyllum sibiricum	1	Nuphar polysepala	0
Open Water	5	Persicaria amphibia	2
Phalaris arundinacea	1	Typha latifolia	4

Comments:

Wetland community type that surrounds Schrieber Lake and open water areas. This CT increased in size because it absorbed some open water areas northwest of Schrieber Lake and added acreage around northeast wetland cells.

Community # 11 Community Type: Open Water / Aquatic macrophytes **Acres:** 12.59

Species	Cover class	Species	Cover class
Aquatic macrophytes	4	Myriophyllum sibiricum	1
Nuphar polysepala	0	Open Water	5
Persicaria amphibia	2	Typha latifolia	1

Comments:

This CT decreased in acreage slightly due to an open water area northwest of Schrieber Lake decreasing in size. This CT was dominated by an average of 2-3 feet of standing water, less than 5% emergent wetland vegetation, and a diversity of submergent/floating aquatic macrophytes.

Community # 13 Community Type: Alopecurus spp. / Phalaris arundinacea **Acres:** 11.56

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	2	Alopecurus pratensis	4
Bare Ground	2	Bromus inermis	3
Cirsium arvense	1	Elymus repens	2
Phalaris arundinacea	3	Poa compressa	2
Poa pratensis	2	Sisymbrium altissimum	1

Comments:

Although reed canary grass provided slightly more (<5%) cover than smooth brome within this upland area, smooth brome was observed frequently and is considered an additional codominant within this community. This CT remained relatively unchanged since 2021.

Community # 14 Community Type: Alopecurus pratensis / **Acres:** 2.5

Species	Cover class	Species	Cover class
Alopecurus pratensis	4	Bromus inermis	3
Cirsium arvense	1	Elymus repens	2
Linaria dalmatica	0	Phalaris arundinacea	1
Phleum pratense	1	Poa pratensis	1

Comments:

Upland CT created in 2022 which replaced a portion of CT1 - Elymus/Bromus because of the increase in dominance of Alopecurus pratensis. The area appears to be slightly wetter than the adjacent CT1, which is slightly higher in elevation.

Community # 15 Community Type: Betula pumila / Salix spp. **Acres:** 10.69

Species	Cover class	Species	Cover class
Betula pumila	4	Carex vesicaria	3
Comarum palustre	1	Open Water	3
Persicaria amphibia	1	Salix bebbiana	1
Salix boothii	1	Salix candida	1
Salix geyeriana	1		

Comments:

Approximately 50% of the shrubs in this CT have died due to perennial inundation caused by the beaver dam which was first observed in 2019.

Total Vegetation Community Acreage **103.62**

VEGETATION TRANSECTS

Site: Schrieber Lake Date: 7/10/2023

Transect Number: 1 **Compass Direction from Start:** 251

Interval Data:

Ending Station 30 Community Type: Phalaris arundinacea / Carex spp.

Species	Cover class	Species	Cover class
Bare Ground	1	Carex lasiocarpa	2
Carex utriculata	3	Carex vesicaria	1
Lemna minor	2	Persicaria amphibia	1
Phalaris arundinacea	5		

Ending Station 284 Community Type: Typha latifolia / Open Water

Species	Cover class	Species	Cover class
Aquatic macrophytes	4	Carex aquatilis	0
Carex vesicaria	0	Lemna minor	1
Open Water	2	Persicaria amphibia	4
Phalaris arundinacea	3	Typha latifolia	3

Transect Notes:

The first 30' of transect 1 was saturated but did not contain surface water. From 30-284' water depth averaged 20" and cattail cover decreased, while water smartweed increased in cover. Boats were used to access transect.

Transect Number: 2 **Compass Direction from Start:** 152

Interval Data:

Ending Station 280 Community Type: Carex spp. /

Species	Cover class	Species	Cover class
Carex utriculata	1	Carex vesicaria	4
Lemna minor	2	Open Water	5
Persicaria amphibia	4	Phalaris arundinacea	1

Transect Notes:

In 2023 this transect only spans one vegetation community because of the expansion of Carex spp. and a reduction in reed canary grass in the perennially inundated portions of the project area.

Transect Number: 3 **Compass Direction from Start:** 175

Interval Data:

Ending Station 325 Community Type: Phalaris arundinacea / Carex spp.

Species	Cover class	Species	Cover class
Bare Ground	2	Carex utriculata	3
Carex vesicaria	2	Persicaria amphibia	1
Phalaris arundinacea	5		

Ending Station 584 Community Type: Carex spp. /

Species	Cover class	Species	Cover class
Bare Ground	2	Carex aquatilis	2
Carex utriculata	0	Carex vesicaria	5
Comarum palustre	1	Persicaria amphibia	1
Phalaris arundinacea	0		

Transect Notes:

The northern portion of this transect did not contain surface water, while the southern portion had up to 20" of surface water.

PLANTED WOODY VEGETATION SURVIVAL

Schrieber Lake

Planting Type	#Planted	#Alive	Notes
Various Species	1500		

Comments

MDT planted 1,500 woody plants in the riparian buffer along Schrieber Creek, Coyote Creek, and around some wetland excavations. In 2020-2023, based on observations at the parallel and perpendicular belt transects, woody planting survival was estimated as well below the required 50% survival. For most of the plantings, competition with herbaceous vegetation such as reed canary grass is problematic, as are the deep perennial inundation conditions present in most of the wetland habitat across the site. Woody plantings along the upper Schrieber Creek corridor were adversely affected by previous weed spraying activities.

Schrieber Lake

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? No

Do the nesting structures need repairs? Yes

Nesting Structure Comments:

Bird boxes were not located in 2023.

Species	#Observed	Behavior	Habitat
American Coot	5		
American Crow	1		
American Robin	1		
Barn Swallow	1		
Cedar Waxwing	1		
Common Yellowthroat	1		
Dark-eyed Junco	1		
Eastern Kingbird	2		
Great Blue Heron	1		
Killdeer	5		
Mallard	2		
Marsh Wren	1		
Red-winged Blackbird	27		
Rock Wren	2		
Song Sparrow	4		
Sora	1		
Tree Swallow	5		
Violet-green Swallow	3		
Wilson's Snipe	2		
Yellow Warbler	1		
Yellow-rumped Warbler	1		

Bird Comments

An abundance of bird species was observed at this site.

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
Columbia Spotted Frog	6	No	No	No	
Elk Carcass	1	No	No	No	
Richardson's Ground Squirrel	2	No	No	No	
Vole	3	No	No	No	
White-tailed Deer	7	No	No	No	
Wolf	1	No	Yes	No	

Wildlife Comments:

A diversity of bird and wildlife species utilize the site. A elk carcass with possible wolf scat next to it was observed at 48.106956, -115.410911.

Schrieber Lake

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
CC1A-1	48.106803	-115.410891	320	CC1A-1 right bank
CC1A-1	48.106803	-115.410891	50	CC1A-1 upstream
CC1A-2	48.1066	-115.41127	175	CC1A-2 left bank
CC1A-2	48.1066	-115.41127	85	CC1A-2 upstream
CC1B-1	48.105509	-115.411518	200	CC1B-1 downstream
CC1B-1	48.105509	-115.411518		
DP01-u	48.1073499047	-115.41066867		
DP01-w	48.1074345058	-115.410624998		
DP02-u	48.1062504335	-115.408486543		
DP02-w	48.1061963335	-115.408556739		
DP03-u	48.102503343	-115.407966813		
DP03-w	48.1025462708	-115.407945759		
DP04b-w	48.1029323809	-115.412076705		
DP04-u	48.1023788115	-115.410623861		
DP04-w	48.102493257	-115.410630608		
DP05-u	48.1063722138	-115.412751218		
DP05-w	48.106250107	-115.41274793		
DP06-u	48.1047882864	-115.414340719		
DP06-w	48.1047421373	-115.414250108		
DP07-u	48.1028068847	-115.413696412		
DP07-w	48.1028074024	-115.413621343		
DP08-u	48.105489235	-115.411008153		
DP08-w	48.1054210255	-115.411067952		
DP09-u	48.1060541637	-115.409562246		
DP09-w	48.1060981204	-115.409625555		
PP-1	48.107033	-115.409592	164	Photo Point 1, Photo 3
PP-1	48.107033	-115.409592	242	Photo Point 1, Photo 1

PP-1	48.107033	-115.409592	197	Photo Point 1, Photo 2
PP-10	48.100529	-115.415406	39	Photo Point 10
PP-2	48.106591	-115.412511	69	Photo Point 2, Photo 5
PP-2	48.106591	-115.412511	162	Photo Point 2, Photo 3
PP-2	48.106591	-115.412511	323	Photo Point 2, Photo 1
PP-2	48.106591	-115.412511	205	Photo Point 2, Photo 2
PP-2	48.106591	-115.412511	104	Photo Point 2, Photo 4
PP-3	48.10754	-115.412747	183	Photo Point 3
PP-4	48.105948	-115.408236	287	Photo Point 4
PP-5	48.104136	-115.413847	359	Photo Point 5, Photo 3
PP-5	48.104136	-115.413847	173	Photo Point 5, Photo 1
PP-5	48.104136	-115.413847	35	Photo Point 5, Photo 2
PP-6	48.104297	-115.414628	52	Photo Point 6, Photo 3
PP-6	48.104297	-115.414628	103	Photo Point 6, Photo 2
PP-6	48.104297	-115.414628	150	Photo Point 6, Photo 1
PP-7	48.105398	-115.411691	355	Photo Point 7, Photo 3
PP-7	48.105398	-115.411691	228	Photo Point 7, Photo 1
PP-7	48.105398	-115.411691	299	Photo Point 7, Photo 2
PP-8	48.105714	-115.411356	79	Photo Point 8, Photo 3
PP-8	48.105714	-115.411356	49	Photo Point 8, Photo 2
PP-8	48.105714	-115.411356	320	Photo Point 8, Photo 1
PP-9	48.105502	-115.409787	120	Photo Point 9, Photo 2
PP-9	48.105502	-115.409787	323	Photo Point 9, Photo 1
SC1-1	48.108236	-115.414862	30	SC1-1 left bank
SC1-1	48.10823599	-115.4148624	300	SC1-1 upstream
SC1-2	48.108116	-115.414221	280	SC1-2 upstream
SC1-2	48.108116	-115.414221	10	SC1-2 left bank
SC2A-1	48.107386	-115.413401	45	SC2A-1 left bank
SC2A-1	48.107386	-115.413401	315	SC2A-1 downstream
SC2A-2	48.106889	-115.41299	275	SC2A-2 downstream
SC2A-2	48.106889	-115.41299	185	SC2A-2 downstream
SC2B-1	48.106342	-115.412902	175	SC2B-1 downstream
SC2B-1	48.106342	-115.412902	265	SC2B-1 right bank
SC3-1	48.105212	-115.412439	240	SC3-1 upstream
SC3-1	48.105212	-115.412439	330	SC3-1 left bank
SC3-2	48.10509	-115.412014	160	SC3-2 downstream
SC3-2	48.10509	-115.412014	70	SC3-2 left bank
SC7-1	48.104608	-115.41138	110	SC7-1 downstream
SC7-1	48.104608	-115.41138	20	SC7-1 left bank
T-1 end	48.106268	-115.411205	71	Transect 1 end
T-1 start	48.106526	-115.410102	251	Transect 1 start
T-2 end	48.105398	-115.411692	332	Transect 2 end

T-2 start	48.106037	-115.412335	152	Transect 2 start
T-3 end	48.104242	-115.413401	335	Transect 3 end
T-3 start	48.105866	-115.413539	175	T-3 start

Comments:

Schrieber Lake

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

The total wetland and aquatic habitat delineated at the Schrieber Lake mitigation site in 2023 was 55.65 acres, a increase of 0.12 acres since 2022 (Table 2; see maps in Appendix A). Schrieber Lake occupied 7.58 acres on MDT property and remaining 'open water' areas represented a total of 4.62 acres.

Functional Assessments

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

Functional Assessment Comments:

Classified as Category I wetland.

Maintenance

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

If yes, do they need to be repaired? Yes

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.

The beaver dam at the southern outlet of the site is intact but does not appear to be active anymore. The beaver dam is still impounding water throughout the mitigation sites at a depth of .5-3 feet. Within the inundated areas, reed canary grass and shrubs declining in cover, while native herbaceous species are increasing in cover.

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

Project/Site: Schrieber Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Convex Slope (%): 50

Subregion (LRR): E 43A Lat: 48.10747157 Long: -115.41074386 Datum: NAD 83

Soil Map Unit Name: 108 - Andic Dystric Eutrochrepts, lacustrine terraces-Andic Dystrochrepts, glacial outwash terraces, complex NWI classification: PEM1C

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:

Approximately 5' higher in elevation than the paired wetland sample point.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	15	✔	FACU
2.			
3.			
4.			
	15 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1. Picea engelmannii	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Elymus trachycaulus	40	✔	FAC
2. Pascopyrum smithii	15	✔	FACU
3. Poa compressa	15	✔	FACU
4. Alopecurus arundinaceus	5		FAC
5. Penstemon confertus	5		UPL
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25.0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	45	x 4 =	180
UPL species	5	x 5 =	25
Column Totals:	100 (A)		355 (B)

Prevalence Index = B/A = 3.55

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. Supported by a PI of 3.55.

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 - 3	7.5YR 2.5/1	100					Loam	Fine roots
3 - 7	7.5YR 3/2	100					Loam	Gravelly
7 - 11								Woody debris and bedrock at 11"
-								
-								
-								
-								
-								

[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: Bedrock

Depth (inches): 11

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators 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. Soils very dry.

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

Project/Site: Schrieber Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Mountain Valley Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR): E 43A Lat: 48.10741743 Long: -115.41064705 Datum: NAD 83

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:

Wetland sample point located at northeast end of project area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	75	✔	FACW
2. Lemna minor	3		OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	78 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25.0

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	3	x 1 =	3
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	78 (A)		153 (B)

Prevalence Index = B/A = 1.96

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 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 - 5	10YR 2/2	100					Peat	Sandy hemic - mucky mineral
5 - 16	10YR 2/1	100					Loam	High OM content
-								
-								
-								
-								
-								
-								

[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:

A hydrogen sulfide odor indicates hydric soil in this profile as well as the presence of hemic /mucky mineral 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): 3

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:

Evidence of wetland hydrology includes saturation to the soil surface and high water table. Surface water observed within 6' of the data point.

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

Project/Site: Schrieber Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Convex Slope (%): 30

Subregion (LRR): E 43A Lat: 48.10628872 Long: -115.40848192 Datum: NAD 83

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:

Data point located upslope from paired wetland data point. Approximately 6' higher in elevation than the water surface in adjacent open water cell.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus ponderosa	15	✔	FACU
2. Pseudotsuga menziesii	5	✔	FACU
3. Pinus contorta	2		FAC
4.			
	22	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1. Pinus ponderosa	5	✔	FACU
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Bromus carinatus	60	✔	UPL
2. Phleum pratense	10		FAC
3. Agrostis stolonifera	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (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	25	x 4 =	100
UPL species	60	x 5 =	300
Column Totals:	102 (A)		451 (B)

Prevalence Index = B/A = 4.42

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 hydrophytic vegetation indicators 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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 3	7.5YR 2.5/1	100					Silt Loam	High content of fine roots
3 - 16	7.5YR 2.5/1	100					Silt Loam	Some gravels
-								
-								
-								
-								
-								
-								

[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.

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. Soils dry.

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

Project/Site: Schrieber Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Mountain Valley Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR): E 43A Lat: 48.10622145 Long: -115.40850774 Datum: NAD 83

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: PEM1C

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:

PEM, riverine wetland. Sample point is located in wetland fringe around Wetland Cell #10.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Juncus nodosus	30	✔	OBL
2. Carex pellita	20	✔	OBL
3. Carex atherodes	15		OBL
4. Eleocharis palustris	10		OBL
5. Alopecurus arundinaceus	7		FAC
6. Agrostis stolonifera	5		FAC
7. Lycopus asper	3		OBL
8. Typha latifolia	3		OBL
9.			
10.			
11.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 7

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	81	x 1 =	81
FACW species	0	x 2 =	0
FAC species	12	x 3 =	36
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	93 (A)		117 (B)

Prevalence Index = B/A = 1.26

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: 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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Mucky Peat	Greasy/Organic
3 - 16	10YR 5/4	85	10YR 5/8	5	C	M	Sand	Fine sand
3 - 16	10YR 3/1	10					Clay Loam	Clay loam clods mixed in matrix
-								
-								
-								
-								
-								

[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:

Due to the location of the soil pit, which used to be a dumpsite and was reclaimed, the soils are still developing.

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): 2

Water Table Present? Yes ✔ No ___ Depth (inches): 9

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:

Evidence of wetland hydrology includes surface water, high water table, saturation to the soil surface, geomorphic position, and a positive fac-neutral test.

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

Project/Site: Schrieber Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.10251778 Long: -115.40794791 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:

Forested hillside/local terrace located south of Schrieber Lake.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	20	✔	FACU
2. Pinus monticola	10	✔	FACU
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Symphoricarpos albus	10	✔	FACU
2. Pinus monticola	5	✔	FACU
3. Spiraea betulifolia	2		FACU
4.			
5.			
	17	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Bromus carinatus	30	✔	UPL
2. Elymus repens	20	✔	FAC
3. Fragaria virginiana	10		FACU
4. Penstemon confertus	5		FAC
5. Phleum pratense	5		FAC
6. Achillea millefolium	3		FACU
7. Alopecurus arundinaceus	3		FAC
8. Allium cernuum	2		FACU
9. Campanula rotundifolia	2		FACU
10.			
11.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 20.0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	33	x 3 =	99
FACU species	64	x 4 =	256
UPL species	30	x 5 =	150
Column Totals:	127 (A)		505 (B)

Prevalence Index = B/A = 3.97

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 hydrophytic vegetation indicators observed.

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	7.5YR 4/2	100					Sandy Clay Loam	Many fine roots
3 - 6.5	7.5YR 4/2	100					Sandy Clay Loam	Gravelly
-								
-								
-								
-								
-								
-								

[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: Rock bottom

Depth (inches): 6.5

Hydric Soil Present? Yes _____ No ✔

Remarks:

Soil could not be reasonably excavated further due to the presence of a cobble bottom. No hydric soil indicators 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. Soils dry.

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

Project/Site: Schrieber Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.102546 Long: -115.407946 Datum: NAD 83

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:

Located in wetland fringe on the south side of Schrieber Lake.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Juncus nodosus	20	✔	OBL
2. Carex stipata	15	✔	OBL
3. Phalaris arundinacea	15	✔	FACW
4. Lycopus asper	10		OBL
5. Carex bebbii	5		OBL
6. Eleocharis palustris	5		OBL
7. Epilobium ciliatum	5		FACW
8. Agrostis stolonifera	3		FAC
9. Scutellaria galericulata	2		OBL
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

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	57	x 1 =	57
FACW species	20	x 2 =	40
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		106 (B)

Prevalence Index = B/A = 1.32

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:

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 3	7.5YR 2.5/1	100					Mucky Sand	Mucky mineral - greasy
4 - 7	10YR 4/2	100					Clay Loam	90% gravels and 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: Rock bottom

Depth (inches): 7

Hydric Soil Present? Yes ✔ No ___

Remarks:

A mucky mineral layer indicates hydric soil in this profile.

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): 2

Water Table Present? Yes ✔ No ___ Depth (inches): 0

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:

2 inches of surface water at the point, and saturation and a high water table at the soil surface indicate wetland hydrology.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2023-07-10

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

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

Landform (hillslope, terrace, etc.): Mountain Valley Local relief (concave, convex, none): Linear Slope (%): 4

Subregion (LRR): E 43A Lat: 48.1022633 Long: -115.4105843 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 on MDT property along the southern boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Larix occidentalis	30	✔	FACU
2. Pinus contorta	30	✔	FAC
3. Abies grandis	15		FACU
4. Picea engelmannii	10		FAC
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Amelanchier alnifolia	20	✔	FACU
2. Spiraea betulifolia	5	✔	FACU
3. Lonicera hispidula	0		FACU
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Linnaea borealis	50	✔	FACU
2. Actaea rubra	20	✔	FACU
3. Cornus canadensis	5		FAC
4. Campanula rotundifolia	2		FACU
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 33

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	142	x 4 =	568
UPL species	0	x 5 =	0
Column Totals:	187 (A)		703 (B)

Prevalence Index = B/A = 3.76

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: DP04U

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 - 18	10YR 6/1						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:

Light soil color is likely the result of volcanic ash deposits or possibly glacio-lacustrine deposits, as have been found in deeper soil borings along the US 2 Highway corridor and in Schrieber Meadows.

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 Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.10251393 Long: -115.41059971 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: PEM1B

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:

Sample point located in PEM wetland along the southcentral portion of the 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	75	✔	FACW
2. Alopecurus arundinaceus	20	✔	FAC
3. Polygonum aviculare	5		FAC
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: 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	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		225 (B)

Prevalence Index = B/A = 2.25

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 the Prevalence Index below 3 indicate a hydrophytic vegetation community at this location.

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 - 15	7.5YR 2.5/1	99	N 2.5/0	1	D	M	Loam	
15 - 18	10YR 7/1	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:

A thick dark surface indicates hydric soil in this profile.

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): 15

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 6

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Saturation at a depth of 6 inches and a positive FAC-neutral test and a dry season water table indicate wetland hydrology at this location. Water table depth was recorded at 15 inches.

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

Project/Site: Schrieber Lake 2023 City/County: Lincoln County Sampling Date: 2023-07-10

Applicant/Owner: MDT State: Montana Sampling Point: DP04b-w

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR): E 43A Lat: 48.1029323 Long: -115.412076 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: PSS1B

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:

This point is located in the inundated fen-car shrubland.

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. Betula pumila	25	✔	OBL
2. Salix bebbiana	5		FACW
3. Salix lasiandra	3		FACW
4.			
5.			
	33 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex vesicaria	30	✔	OBL
2. Persicaria amphibia	15	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum _____

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	70	x 1 =	70
FACW species	8	x 2 =	16
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	78 (A)		86 (B)

Prevalence Index = B/A = 1.10

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 and dominance test indicate hydrophytic vegetation. Standing water is present at the sample point.

SOIL

Sampling Point: DP04b-w

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]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:

This location was inundated with 20 inches of water making it impossible to effectively excavate a soil test pit, but sulfidic odor was present when the soil was probed with a stick.

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): 20

Water Table Present? Yes ✔ No _____ Depth (inches): 0

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:

Evidence of wetland hydrology present in a saturation and a high water table at the soil surface, 20 inches of water above the surface, the site's geomorphic position, a positive FAC-neutral test, and saturation visible on aerial imagery.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2023-07-10

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

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

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

Subregion (LRR): E 43A Lat: 48.1063498 Long: -115.4127623 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 Wetland Cell 6.

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. Alopecurus arundinaceus	40	✔	FAC
3. Poa pratensis	10		FAC
4. Cirsium arvense	2		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum _____

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	52	x 3 =	156
FACU species	0	x 4 =	0
UPL species	45	x 5 =	225
Column Totals:	97 (A)		381 (B)

Prevalence Index = B/A = 3.93

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: 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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100					Loam	
8 - 10	10YR 6/2	100					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:

No hydric soil indicators observed. Light soil color is the result of ash deposits, not saturation.

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 Lake City/County: Lincoln County Sampling Date: 2023-07-10

Applicant/Owner: MDT State: Montana Sampling Point: DP05w

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

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

Subregion (LRR): E 43A Lat: 48.1062573 Long: -115.4127991 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 adjacent to Schrieber Creek channel at the northwest edge of Wetland Cell 6.

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. Poa pratensis	10		FAC
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	75	x 2 =	150
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		225 (B)

Prevalence Index = B/A = 2.25

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: DP05w

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 3/2	98	7.5YR 4/6	5	C	M	Loam	many fine roots
4 - 16	10YR 2/1	88	10YR 6/2	10	D	M	Loam	
4 - 16			10YR 4/6	2	C	M		
16 - 20	10YR 4/1	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:

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): 18

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 to the soil surface, the geomorphic position of the point, a dry season water table, and a positive FAC-neutral test provide evidence of wetland hydrology. Water table depth was measured at 18 inches.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2023-07-10

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

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

Landform (hillslope, terrace, etc.): Upland, Flat Local relief (concave, convex, none): Linear Slope (%): 4

Subregion (LRR): E 43A Lat: 48.1048184 Long: -115.4143682 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 Wetland Cell 1 and the western project boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus contorta	10	✔	FAC
2.			
3.			
4.			
	10	= 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	10		FAC
3. Poa pratensis	5		FAC
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 _____

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	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	85	x 5 =	425
Column Totals:	110 (A)		500 (B)

Prevalence Index = B/A = 4.54

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)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	99	5YR 4/6	1	C	M	Loam	extremely dry
10 - 18	10YR 6/1	98	5YR 4/6	2	C	M	Loam	extremely dry
-								
-								
-								
-								
-								
-								

[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:

Light soil color is likely the result of a volcanic ash deposit. No hydric soil indicators 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 Lake City/County: Lincoln County Sampling Date: 2023-07-10

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

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

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

Subregion (LRR): E 43A Lat: 48.1047675 Long: -115.414325 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 Wetland Cell 1.

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. Carex utriculata	2		OBL
3.			
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	2	x 1 =	2
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	92 (A)		182 (B)

Prevalence Index = B/A = 1.98

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 and positive dominance tests indicate the presence of hydrophytic vegetation 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 - 3	10YR 2/1	98					Loam	
3 - 10	10YR 2/1	98	10YR 4/6	2	C	M	Loam	
10 - 18	10YR 6/1	96	5YR 4/6	4	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 in both the depleted matrix and the matrix of 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): 10

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Saturation at a depth of 10 inches, oxidized rhizospheres along living roots, and a positive FAC-neutral test indicate the presence of wetland hydrology at this location.

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

Project/Site: Schrieber Lake City/County: Lincoln County Sampling Date: 2023-07-10

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

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

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

Subregion (LRR): E 43A Lat: 48.1028251 Long: -115.4136715 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 in southwest corner of project area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus contorta	10	✔	FAC
2. Abies grandis	5	✔	FACU
3.			
4.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Symphoricarpos albus	25	✔	FACU
2.			
3.			
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Hieracium aurantiacum	40	✔	UPL
2. Calamagrostis canadensis	10		FACW
3. Centaurea stoebe	5		UPL
4. Fragaria virginiana	5		FACU
5. Lotus corniculatus	5		FAC
6. Achillea millefolium	3		FACU
7. Campanula rotundifolia	2		FACU
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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	40	x 4 =	160
UPL species	45	x 5 =	225
Column Totals:	110 (A)		450 (B)

Prevalence Index = B/A = 4.09

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 2	7.5YR 3/2	100					Loam	many fine roots
2 - 16	7.5YR 4/2	100						
-								
-								
-								
-								
-								
-								

[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.

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 Lake City/County: Lincoln County Sampling Date: 2023-07-10

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

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

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

Subregion (LRR): E 43A Lat: 48.1027827 Long: -115.4136867 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:

Wetland sample point located in the southwest corner of the 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. Alnus incana	8	✔	FACW
2.			
3.			
4.			
5.			
	8 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	98	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2

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	0	x 1 =	0
FACW species	106	x 2 =	212
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	106 (A)		212 (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, dominance test, and a prevalence index of less than 3 indicate the presence of a hydrophytic vegetation community at this location.

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 - 12	10YR 2/1						Loam	
12 - 23	10YR 2/1	80	7.5YR 5/6	20	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:

Due to saturation to the soil surface, it is likely that redoximorphic concentrations in the upper soil layer are masked. Requirements for the redox dark surface indicator are met, aside from the depth at which concentrations begin.

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

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

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

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.10544843 Long: -115.41096791 Datum: NAD 83

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: PEM1C

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 data point on island. Coarsely textured soils are well drained and shallow.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Centaurea stoebe	20	✔	UPL
2. Penstemon confertus	15	✔	UPL
3. Poa compressa	15	✔	FACU
4. Rumex sp.	10		
5. Verbascum thapsus	5		FACU
6. Phleum pratense	3		FAC
7. Pseudoroegneria spicata	2		UPL
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 30.0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (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	3	x 3 =	9
FACU species	20	x 4 =	80
UPL species	37	x 5 =	185
Column Totals:	60 (A)		274 (B)

Prevalence Index = B/A = 4.57

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 3	7.5YR 2.5/1	100					Loam	
3 - 7	7.5YR 2.5/1	100					Loam	Gravelly
-								
-								
-								
-								
-								
-								

[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: Cobble bottom/rock refusal

Depth (inches): 7

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed. Rock refusal at 7" where rock fragments impede further excavation.

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. Soil extremely dry

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

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

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.10548992 Long: -115.41108861 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:

Fringe between island and Carex community with standing water.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Carex aquatilis	40	✔	OBL
2. Alopecurus pratensis	20	✔	FAC
3. Persicaria amphibia	15		OBL
4. Phalaris arundinacea	10		FACW
5. Cirsium arvense	4		FAC
6. Lemna minor	1		OBL
7.			
8.			
9.			
10.			
11.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10.0

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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	56	x 1 =	56
FACW species	10	x 2 =	20
FAC species	24	x 3 =	72
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		148 (B)

Prevalence Index = B/A = 1.64

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 below three indicate a hydrophytic vegetation community at this data point.

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 - 5	10YR 2/1	100					Peat	Peat sand and high litter content
5 - 20	10YR 2/1	100					Mucky Peat	Sulfidic odor. Greasy - hemic
-								
-								
-								
-								
-								
-								

[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:

A histic epipedon and a sulfidic odor indicate wetland hydrology at this data 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): .5

Water Table Present? Yes ✔ No ___ Depth (inches): 3

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:

Several indicators of wetland hydrology were observed, including sulfidic odor, water stained leaves, visible inundation on aerial imagery, a positive FAC-neutral test, and the geomorphic position of the point. 0.5" of surface water was present within the plot, the water table was measured at a depth of 3 inches, and soil was saturated to the surface. Iron deposits were observed in shallow pond and in water around the data point.

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

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

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

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

Subregion (LRR): E 43A Lat: 48.10605704 Long: -115.40958855 Datum: NAD 83

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: PEM1C

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 data point in upland island in center of site. Soil substrate is shallow and coarsely textured.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa compressa	25	✔	FACU
2. Linaria vulgaris	15	✔	UPL
3. Lepidium draba	12	✔	UPL
4. Verbascum thapsus	10		FACU
5. Rumex sp.	8		
6. Centaurea stoebe	5		UPL
7. Phleum pratense	5		FAC
8. Bromus inermis	3		UPL
9. Achillea millefolium	2		FACU
10.			
11.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20.0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (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	5	x 3 =	15
FACU species	37	x 4 =	148
UPL species	35	x 5 =	175
Column Totals:	77 (A)		338 (B)

Prevalence Index = B/A = 4.39

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 hydrophytic vegetation indicators 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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/1	100					Loamy Sand	Shallow fine roots
2 - 7	2.5Y 4/1	100					Sand	Gravelly
-								
-								
-								
-								
-								
-								

[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 bedrock

Depth (inches): 7

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators 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. Soils extremely dry despite recent rain.

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

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

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

Investigator(s): S Weyant Section, Township, Range: S13 T27N R30W

Landform (hillslope, terrace, etc.): Mountain Valley Local relief (concave, convex, none): Concave Slope (%): 15

Subregion (LRR): E 43A Lat: 48.10604221 Long: -115.40972345 Datum: WGS 84

Soil Map Unit Name: 105 - Aquic Udifluvents, poorly drained NWI classification: PEM1C

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:

Fringe at toe of upland island and along Wetland Cell 9.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	95	✔	FACW
2. Cirsium arvense	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
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	95	x 2 =	190
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		205 (B)

Prevalence Index = B/A = 2.05

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:

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

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 - 7	7.5YR 2.5/1	100					Peat	Peat and sand
7 - 20	10YR 2/1	98	10YR 4/4	2	C	M	Mucky Loam/Clay	Horizon is primarily peat
20 - 23	2.5Y 4/1	95	10YR 6/8	5	CS	M	Sand	Gravelly
-								
-								
-								
-								
-								

[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:

2" litter and roots in top of mineral soil. Hydrogen sulfide odor and a loamy mucky mineral layer indicate hydric soil in this profile.

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): 20

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:

HWT slowly filling.

Remarks:

Saturation at the soil surface, sulfidic odor, the geomorphic position of the point, and a positive FAC-neutral test indicate wetland hydrology at this location.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Schrieber Lake **2. MDT Project #:** NH 27 (029) **Control #:** 1027007

3. Evaluation Date: 07/12/2022 **4. Evaluator(s):** J Trilling, S Weyant, K Lauver. M. Hickey **5. Wetlands/Site #(s):** Schrieber Lake

6. Wetland Location(s): i. Legal: T27N,R30E,13 **Latitude/Longitude:** 48.104991, -115.410849 : Center of AA

ii. Approx. Stationing or Mileposts: Approximately Milepost 53.8

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: 55.650 acres (measured)

9. Assessment area (AA): 55.650 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	NA	PP	25.00
D	EM	NA	PP	10.00
S	EM	NA	SI	10.00
S	EM	NA	PP	30.00
S	SS	NA	PP	20.00
R	UB	NA	PP	5.00

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)

RARE

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: Spotted knapweed, Canada thistle, orange hawkweed, field bindweed, and common toadflax.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The site is in a relatively flat valley bottom that has historically been used for agriculture and hay production. The valley sides are heavily forested with secondary growth coniferous forest. Nearly the entire AA has permanent/perennial water regime and is dominated by hydrophytic vegetation. PSS wetlands occur along pre-existing creek channels and in the site's southwest corner where a "carr" fen occurs. The fen supports bog birch and has been reported to support sageleaf willow in previous years.

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, emergent, scrub-shrub vegetation classes occur onsite.

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) Spalding's Catchfly(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 IPAC. A young female grizzly was killed by a vehicle on the adjacent US Highway 2 in 2022. USFWS and USFS have observed a number of grizzly bears in the area for several years.

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)
Salix candida (S3/S4),Western toad (S2)	Townsend's big-eared bat (S3), hoary bat	Westslope cuthroat trout (S2), fisher (S3)

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): MDT BRR. USFS, MTNHP, and MFWP databases and discussions with reg wildlife and fisheries biologists. Western toads were observed by MDT and Kootenai Nat'l Forest personnel in April 2011.

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
- X 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 usage.

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		.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: MDT, Field observations, FishMT.

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: 0.7M **Comments:** Brook Trout documented in Schrieber Creek immediately up and downstream of Schrieber Lake by FWP in 2011 (MFISH query). West slope Cutthroat documented upstream, outside the project area. Largemouth bass and bluegill observed north of the site.

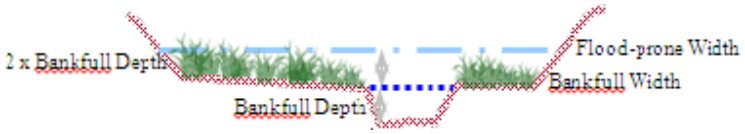
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark ___ **NA** and proceed to 14F.)

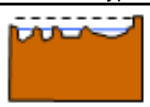
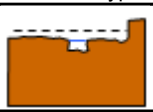
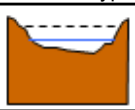
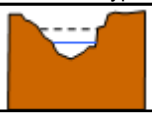
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

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		.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.

25 /	10 =	**2.50**
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:** Stream channels in AA have free access to most of their floodplains. Floodplains are dominated by herbaceous vegetation.

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, ___**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 inundation, much greater than 5 acre-feet, observed in 2023 and previous monitoring events.

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, ___**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 has potential to receive minor sedimentation from nearby US Hwy 2 and adjacent hillsides that have been logged.

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, ___**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: Shorelines and banks are well vegetated primarily with reed canary grass, with lesser cover by Carex spp.

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 acres, perennial inundation, and has surface and subsurface outlets.

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

i. Discharge Indicators

- X The AA is a slope wetland
- X Springs or seeps are known or observed
- X Vegetation growing during dormant season/drought
- X 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
- ___ Other:

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: This wetland complex contains a fen, is relatively undisturbed, and so is fairly unique in the watershed.

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: This site is open to public access and has a high potential for education, especially for birders since there is a hill at the entrance to the site that provides a good vantage point for low impact bird viewing.

General Site Notes
The beaver dam inpounding water at the outlet of Schrieber Lake first observed in 2019 appeared to be inactive during the 2023 site visit. No sign of freshly cut sticks or newly placed packed mud was observed.

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

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	44.52	
B. MT Natural Heritage Program Species Habitat	H	0.90	1	50.09	
C. General Wildlife Habitat	E	1.00	1	55.65	*
D. General Fish Habitat	M	0.70	1	38.96	
E. Flood Attenuation	M	0.60	1	33.39	
F. Short and Long Term Surface Water Storage	H	1.00	1	55.65	*
G. Sediment/Nutrient/Toxicant Removal	H	1.00	1	55.65	
H. Sediment/Shoreline Stabilization	H	1.00	1	55.65	
I. Production Export/Food Chain Support	H	1.00	1	55.65	*
J. Groundwater Discharge/Recharge	H	1.00	1	55.65	
K. Uniqueness	H	1.00	1	55.65	*
L. Recreation/Education Potential (bonus points)	H	0.20	1	11.13	
Totals:		10.20	11.00	567.64	
Percent of Possible Score			93%		

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**

_X_ 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 structurally diverse and productive site. However, the cover of shrubs has been reduced due to the increased water levels.

Table B-1. Schrieber Lake Wetland Mitigation Site. Comprehensive vegetation species list 2015-2023

Scientific Name	**Common Name**	**WMVC Indicator Status[(1)]**
Abies bifolia	Rocky Mountain Alpine fir	FACU
Abies grandis	Grand Fir	FACU
Achillea millefolium	Common Yarrow	FACU
Agrostis capillaris	Colonial Bent	FAC
Agrostis scabra	Rough Bent	FAC
Agrostis stolonifera	Spreading Bent	FACW
Algae, green	Algae, green	N/A
Allium cernuum	Nodding Onion	FACU
Alnus incana	Speckled Alder	FACW
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FAC
Alopecurus pratensis	Field Meadow-Foxtail	FAC
Alyssum alyssoides	Pale Madwort	UPL
Amelanchier alnifolia	Saskatoon Service-Berry	FACU
Antennaria microphylla	Littleleaf Pussytoes	UPL
Antennaria sp.	Pussytoes	N/A
Apocynum androsaemifolium	Spreading Dogbane	FACU
Arctostaphylos uva-ursi	Red Bearberry	FACU
Berberis repens	Creeping Oregon-grape	UPL
Berteroa incana	Hoary Alyssum	UPL
Betula pumila	Bog Birch	OBL
Bromus carinatus	Mountain Brome	UPL
Bromus inermis	Smooth Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Calamagrostis rubescens	Pinegrass	UPL
Campanula rotundifolia	Bluebell-of-Scotland	FACU
Carex aquatilis	Leafy Tussock Sedge	OBL
Carex bebbii	Bebb's Sedge	OBL
Carex geyeri	Geyer's Sedge	UPL
Carex inops	Long-stolon Sedge	UPL
Carex lasiocarpa	Woolly-Fruit Sedge	OBL
Carex nebrascensis	Nebraska Sedge	OBL
Carex simulata	Analogue Sedge	OBL
Carex sp.	Sedge	N/A
Carex utriculata	Northwest Territory Sedge	OBL
Carex vesicaria	Lesser Bladder Sedge	OBL
Carex stipata	**Stalk-Grain Sedge**	**OBL**
Centaurea stoebe	Spotted Knapweed	UPL
Cirsium arvense	Canada Thistle	FAC

Scientific Name	Common Name	WMVC Indicator Status[1]
Cirsium vulgare	Bull thistle	FACU
Comarum palustre	Purple Marshlocks	OBL
Convolvulus arvensis	Field Bindweed	UPL
Cornus canadensis	Canadian Bunchberry	FAC
Crataegus douglasii	Black Hawthorn	FAC
Cynoglossum officinale	Gypsy-Flower	FACU
Dactylis glomerata	Orchard Grass	FACU
Deschampsia caespitosa	Tufted Hair Grass	FACW
Eleocharis palustris	Common Spike-Rush	OBL
Elymus glaucus	Blue Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FAC
Elymus trachycaulus	Slender Wild Rye	FAC
Epilobium ciliatum	Fringed Willow Herb	FACW
Equisetum arvense	Field Horsetail	FAC
Festuca rubra	Red Fescue	FAC
Fragaria virginiana	Virginia Strawberry	FACU
Galium triflorum	Fragrant Bedstraw	FACU
Geum macrophyllum	Large-Leaf Avens	FAC
Glyceria grandis	American Manna Grass	OBL
Glyceria striata	Fowl Manna Grass	OBL
Gnaphalium palustre	Western Marsh Cudweed	FACW
Hieracium aurantiacum	Orange Hawkweed	UPL
Hieracium scouleri	Scouler's Woollyweed	UPL
Hypericum perforatum	Common St. John's-Wort	FACU
Juncus nodosus	Knotted Rush	OBL
Juncus tenuis	Lesser Poverty Rush	FAC
Larix occidentalis	Western Larch	FACU
Lemna minor	Common Duckweed	OBL
Lepidium draba	Whitetop	UPL
Leucanthemum vulgare	Ox-Eye Daisy	FACU
Linaria dalmatica	Dalmatian Toadflax	UPL
Linaria vulgaris	Butter-and-eggs	UPL
Linnaea borealis	American Twinflower	FACU
Maianthemum stellatum	Starry False Solomon's-Seal	FAC
Moss	Sphagnum/Aulacomnium moss	N/A
Myriophyllum sibiricum	Siberian Water-Milfoil	OBL
Nassella viridula	Barkworth Green Needlegrass	UPL
Nuphar polysepala	Yellow Pond-Lily	OBL
Onosmodium bejariense var. bejariense	Soft-Hair Marbleseed	UPL

Scientific Name	Common Name	WMVC Indicator Status[1]
Pascopyrum smithii	Western-Wheat Grass	FACU
Penstemon confertus	Yellow Beardtongue	UPL
Penstemon sp.	Beardtongue	N/A
Persicaria amphibia	Water Smartweed	OBL
Phalaris arundinacea	Reed Canary Grass	FACW
Phleum pratense	Common Timothy	FACU
Picea engelmannii	Engleman Spruce	FAC
Pinus contorta	Lodgepole Pine	FAC
Pinus monticola	Western White Pine	FACU
Pinus ponderosa	Ponderosa Pine	FACU
Plantago sp.	Plantain	N/A
Poa compressa	Flat-Stem Blue Grass	FACU
Poa palustris	Fowl Blue Grass	FAC
Poa pratensis	Kentucky Blue Grass	FAC
Poa sp.	Blue Grass	N/A
Potentilla anserina	Silverweed	OBL
Potentilla norvegica	Norwegian Cinquefoil	FAC
Pseudoroegneria spicata	Bluebunch Wheatgrass	UPL
Pseudotsuga menziesii	Douglas-Fir	FACU
Rhamnus alnifolia	Alder-Leaf Buckthorn	FACW
Rosa woodsii	Woods' Rose	FACU
Rumex acetosa	Garden Sorrel	FAC
Rumex acetosella	Common Sheep Sorrel	FACU
Salix bebbiana	Gray Willow	FACW
Salix boothii	Booth's Willow	FACW
Salix candida	Sage Willow	OBL
Salix geyeriana	Geyer's Willow	FACW
Salix lasiandra	Pacific Willow	FACW
Salix sp.	Willow	N/A
Scirpus microcarpus	Red-Tinge Bulrush	OBL
Scutellaria galericulata	Hooded Skullcap	OBL
Shepherdia canadensis	Russet Buffalo-Berry	UPL
Sisymbrium altissimum	Tall Hedge-Mustard	FACU
Symphoricarpos albus	Common Snowberry	FACU
Symphyotrichum spathulatum	Mountain American-Aster	FAC
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	UPL
Trifolium aureum	Yellow Clover	UPL
Typha latifolia	Broad-Leaf Cat-Tail	OBL

Scientific Name	**Common Name**	**WMVC Indicator Status[(1)]**
Urtica dioica	Stinging Nettle	FAC
Utricularia minor	Lesser Bladderwort	OBL
Vaccinium sp.	Huckleberry	N/A
Verbascum thapsus	Great Mullein	FACU

[1] 2020 NWPL (USACE 2020)

New species identified in 2023 are **bolded.**

APPENDIX C
PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

Schrieber Lake: Photo Point Photographs



Photo Point: 1 – Photo 1 Location: Northwest Boundary
Bearing: 242 degrees Year: 2015



Photo Point: 1 – Photo 1 Location: Northwest Boundary
Bearing: 242 degrees Year: 2023



Photo Point: 1 – Photo 2 Location: Northwest Boundary
Bearing: 200 degrees Year: 2015



Photo Point: 1 – Photo 2 Location: Northwest Boundary
Bearing: 200 degrees Year: 2023



Photo Point: 1 – Photo 3 Location: Northwest Boundary
Bearing: 164 degrees Year: 2015



Photo Point: 1 – Photo 3 Location: Northwest Boundary
Bearing: 164 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 2 – Photo 1 Location: Near Corral
Bearing: 323 degrees Year: 2015



Photo Point: 2 – Photo 1 Location: Near Corral
Bearing: 323 degrees Year: 2023



Photo Point: 2 – Photo 2 Location: Near Corral
Bearing: 205 degrees Year: 2015



Photo Point: 2 – Photo 2 Location: Near Corral
Bearing: 205 degrees Year: 2023



Photo Point: 2 – Photo 3 Location: Near Corral
Bearing: 162 degrees Year: 2015



Photo Point: 2 – Photo 3 Location: Near Corral
Bearing: 162 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 2 – Photo 4 Location: Near Corral
Bearing: 104 degrees Year: 2015



Photo Point: 2 – Photo 4 Location: Near Corral
Bearing: 104 degrees Year: 2023



Photo Point: 2 – Photo 5 Location: Near Corral
Bearing: 69 degrees Year: 2015



Photo Point: 2 – Photo 5 Location: Near Corral
Bearing: 69 degrees Year: 2023



Photo Point: 3 Location: West of Corrals
Bearing: 183 degrees Year: 2015



Photo Point: 3 Location: West of Corrals
Bearing: 183 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 4 Location: East corner of Cell 10
Bearing: 287 degrees Year: 2015



Photo Point: 4 Location: East corner of Cell 10
Bearing: 287 degrees Year: 2023



Photo Point: 5 – Photo 1 Location: Northwest corner of carr
Bearing: 143 degrees Year: 2015



Photo Point: 5 – Photo 1 Location: Northwest corner of carr
Bearing: 143 degrees Year: 2023



Photo Point: 5 – Photo 2 Location: Northwest corner of carr
Bearing: 35 degrees Year: 2015



Photo Point: 5 – Photo 2 Location: Northwest corner of carr
Bearing: 35 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 5 – Photo 3 Location: Corner of carr
Bearing: 359 degrees Year: 2015

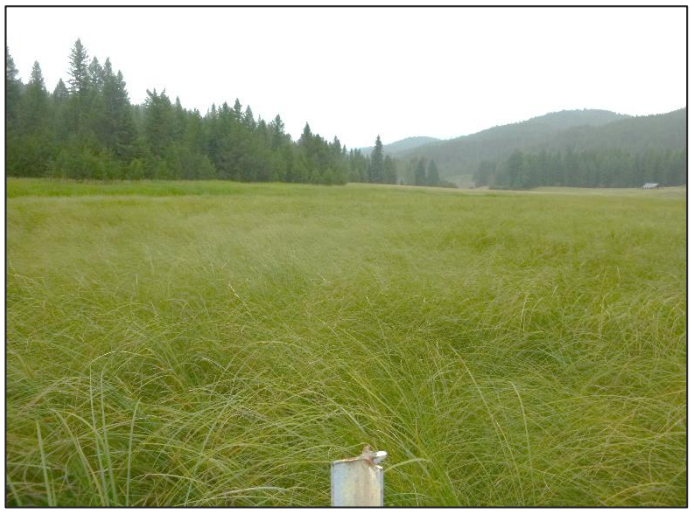


Photo Point: 5 – Photo 3 Location: Corner of carr
Bearing: 359 degrees Year: 2023



Photo Point: 6 – Photo 1 Location: South end of Cell 1
Bearing: 150 degrees Year: 2015



Photo Point: 6 – Photo 1 Location: South end of Cell 1
Bearing: 150 degrees Year: 2023



Photo Point: 6 – Photo 2 Location: South end of Cell 1
Bearing: 103 degrees Year: 2015



Photo Point: 6 – Photo 2 Location: South end of Cell 1
Bearing: 103 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 6 – Photo 3 Location: South end of Cell 1
Bearing: 52 degrees Year: 2015



Photo Point: 6 – Photo 3 Location: South end of Cell 1
Bearing: 52 degrees Year: 2023



Photo Point: 7 – Photo 1 Location: South end of Transect 2
Bearing: 228 degrees Year: 2015



Photo Point: 7 – Photo 1 Location: South end of Transect 2
Bearing: 228 degrees Year: 2023



Photo Point: 7 – Photo 2 Location: South end of Transect 2
Bearing: 299 degrees Year: 2015



Photo Point: 7 – Photo 2 Location: South end of Transect 2
Bearing: 299 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 7 – Photo 3 Location: South end of Transect 2
Bearing: 355 degrees Year: 2015



Photo Point: 7 – Photo 3 Location: South end of Transect 2
Bearing: 355 degrees Year: 2023



Photo Point: 8 – Photo 1 Location: Interior of site
Bearing: 320 degrees Year: 2015



Photo Point: 8 – Photo 1 Location: Interior of site
Bearing: 320 degrees Year: 2023



Photo Point: 8 – Photo 2 Location: Interior of site
Bearing: 49 degrees Year: 2015



Photo Point: 8 – Photo 2 Location: Interior of site
Bearing: 49 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 8 – Photo 3 Location: Interior of site
Bearing: 79 degrees Year: 2015



Photo Point: 8 – Photo 3 Location: Interior of site
Bearing: 79 degrees Year: 2023



Photo Point: 9 – Photo 1 Location: Upland island center of site
Bearing: 323 degrees Year: 2015



Photo Point: 9 – Photo 1 Location: Upland island center of site
Bearing: 323 degrees Year: 2023



Photo Point: 9 – Photo 2 Location: Upland island center of site
Bearing: 120 degrees Year: 2015



Photo Point: 9 – Photo 2 Location: Upland island center of site
Bearing: 120 degrees Year: 2023

Schrieber Lake: Photo Point Photographs



Photo Point: 10 Location: Overlook
Bearing: 39 degrees Year: 2015



Photo Point: 10 Location: Overlook
Bearing: 39 degrees Year: 2023

Schrieber Lake: Vegetation Transect Photographs



Transect 1: Start Location: T-1
Bearing: 251 degrees Year: 2015



Transect 1: Start Location: T-1
Bearing: 251 degrees Year: 2023



Transect 1: End Location: T-1
Bearing: 71 degrees Year: 2015



Transect 1: End Location: T-1
Bearing: 71 degrees Year: 2023



Transect 2: Start Location: T-2
Bearing: 152 degrees Year: 2015



Transect 2: Start Location: T-2
Bearing: 152 degrees Year: 2023

Schrieber Lake: Vegetation Transect Photographs



Transect 2: End
Bearing: 332 degrees
Location: T-2
Year: 2015



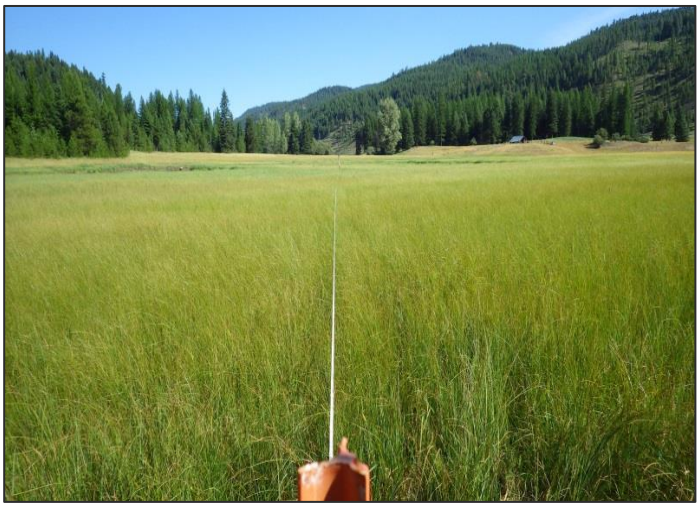
Transect 2: End
Bearing: 332 degrees
Location: T-2
Year: 2023



Transect 3: Start
Bearing: 175 degrees
Location: T-3
Year: 2015



Transect 3: Start
Bearing: 175 degrees
Location: T-3
Year: 2023



Transect 3: End
Bearing: 355 degrees
Location: T-3
Year: 2015



Transect 3: End
Bearing: 355 degrees
Location: T-3
Year: 2023

Schrieber Lake: Data Point Photographs



Data Point: DP01w Location: Veg Com 3
Year: 2023



Data Point: DP01u Location: Veg Com 1
Year: 2023



Data Point: DP02w Location: Veg Com 3
Year: 2023



Data Point: DP02u Location: Veg Com 1
Year: 2023



Data Point: DP03w Location: Veg Com 3
Year: 2023



Data Point: DP03u Location: Veg Com 1
Year: 2023

Schrieber Lake: Data Point Photographs



Data Point: DP04b-w Location: Veg Com 2
Year: 2023



Data Point: DP04-w Location: Veg Com 3
Year: 2023



Data Point: DP04u Location: Veg Com 5
Year: 2023



Data Point: DP05w Location: Veg Com 3
Year: 2023



Data Point: DP05u Location: Veg Com 1
Year: 2023

Schrieber Lake: Data Point Photographs



Data Point: DP06w Location: Veg Com 3
Year: 2023



Data Point: DP06u Location: Veg Com 1
Year: 2023



Data Point: DP07w Location: Veg Com 3
Year: 2023



Data Point: DP07u Location: Veg Com 5
Year: 2023



Data Point: DP08w Location: Veg Com 8
Year: 2023



Data Point: DP08u Location: Veg Com 1
Year: 2023

Schrieber Lake: Data Point Photographs



Data Point: DP09w Location: Veg Com 8
Year: 2023



Data Point: DP09u Location: Veg Com 1
Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: SC1-1 Location: Schrieber Creek
Bearing: 300° – upstream Year: 2016



Cross-Section: SC1-1 Location: Schrieber Creek
Bearing: 300° – upstream Year: 2023



Cross-Section: SC1-1 Location: Schrieber Creek
Bearing: 30° – Left Bank Year: 2016



Cross-Section: SC1-1 Location: Schrieber Creek
Bearing: 30° – Left Bank Year: 2023



Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 280˚ – upstream Year: 2016



Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 280˚ – upstream Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 10° – Left Bank Year: 2016



Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 10° – Left Bank Year: 2023



Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 315° – downstream Year: 2016



Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 315° – downstream Year: 2023



Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 45° – Left Bank Year: 2016



Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 135° – Left Bank Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: SC2A-2 Location: Schrieber Creek
Bearing: 185° – downstream Year: 2016



Cross-Section: SC2A-2 Location: Schrieber Creek
Bearing: 185° – downstream Year: 2023



Cross-Section: SC2A-2 Location: Schrieber Creek
Bearing: 275° – Right Bank Year: 2016



Cross-Section: SC2A-2 Location: Schrieber Creek
Bearing: 275° –Right Bank Year: 2023



Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 175° – downstream Year: 2016



Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 175° – downstream Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 265° – Right Bank Year: 2016



Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 265° – Right Bank Year: 2023



Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 240° – Upstream Year: 2016



Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 240° – Upstream Year: 2023



Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 330° – Left Bank Year: 2016



Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 60° – Leftbank Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: SC3-2 Location: Schrieber Creek
Bearing: 160° – downstream Year: 2016



Cross-Section: SC3-2 Location: Schrieber Creek
Bearing: 160° – downstream Year: 2023



Cross-Section: SC3-2 Location: Schrieber Creek
Bearing: 70° – Left Bank Year: 2016



Cross-Section: SC3-2 Location: Schrieber Creek
Bearing: 70° –Left Bank Year: 2023



Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 110° – downstream Year: 2016



Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 110° – downstream Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 20° – Left Bank Year: 2016



Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 20° – Left Bank Year: 2023



Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 50° – Upstream Year: 2016



Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 50° – Upstream Year: 2023



Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 320° – Right Bank Year: 2016



Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 230° – Rightbank Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 85° – Upstream Year: 2016



Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 85° – Upstream Year: 2023



Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 355° – Right Bank Year: 2016



Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 180° – Rightbank Year: 2023



Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 200° – Downstream Year: 2016



Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 200° – Downstream Year: 2023

Schrieber Lake: Cross-Section Photographs



Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 110° – Left Bank Year: 2016

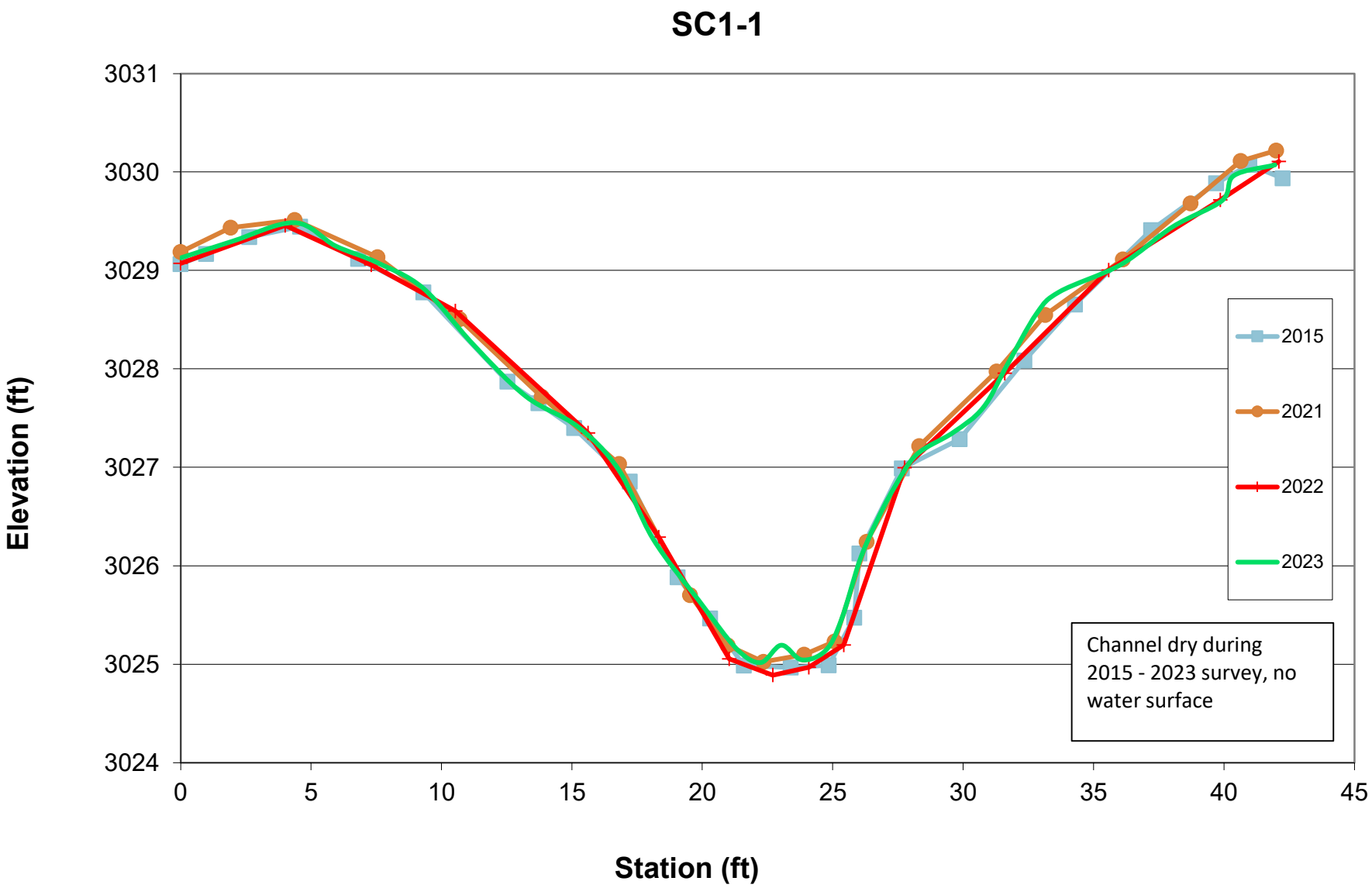


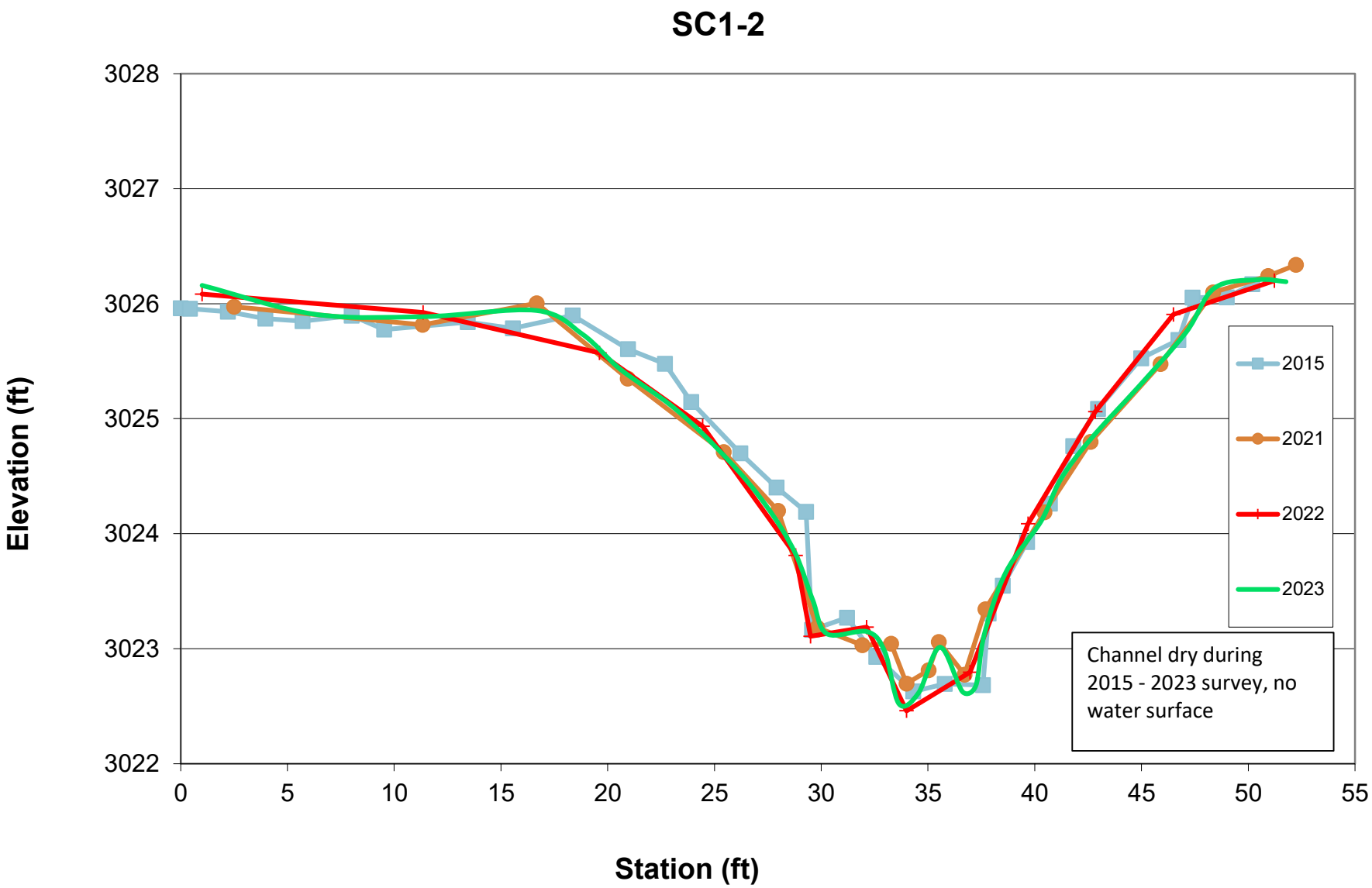
Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 110° – Left Bank Year: 2023

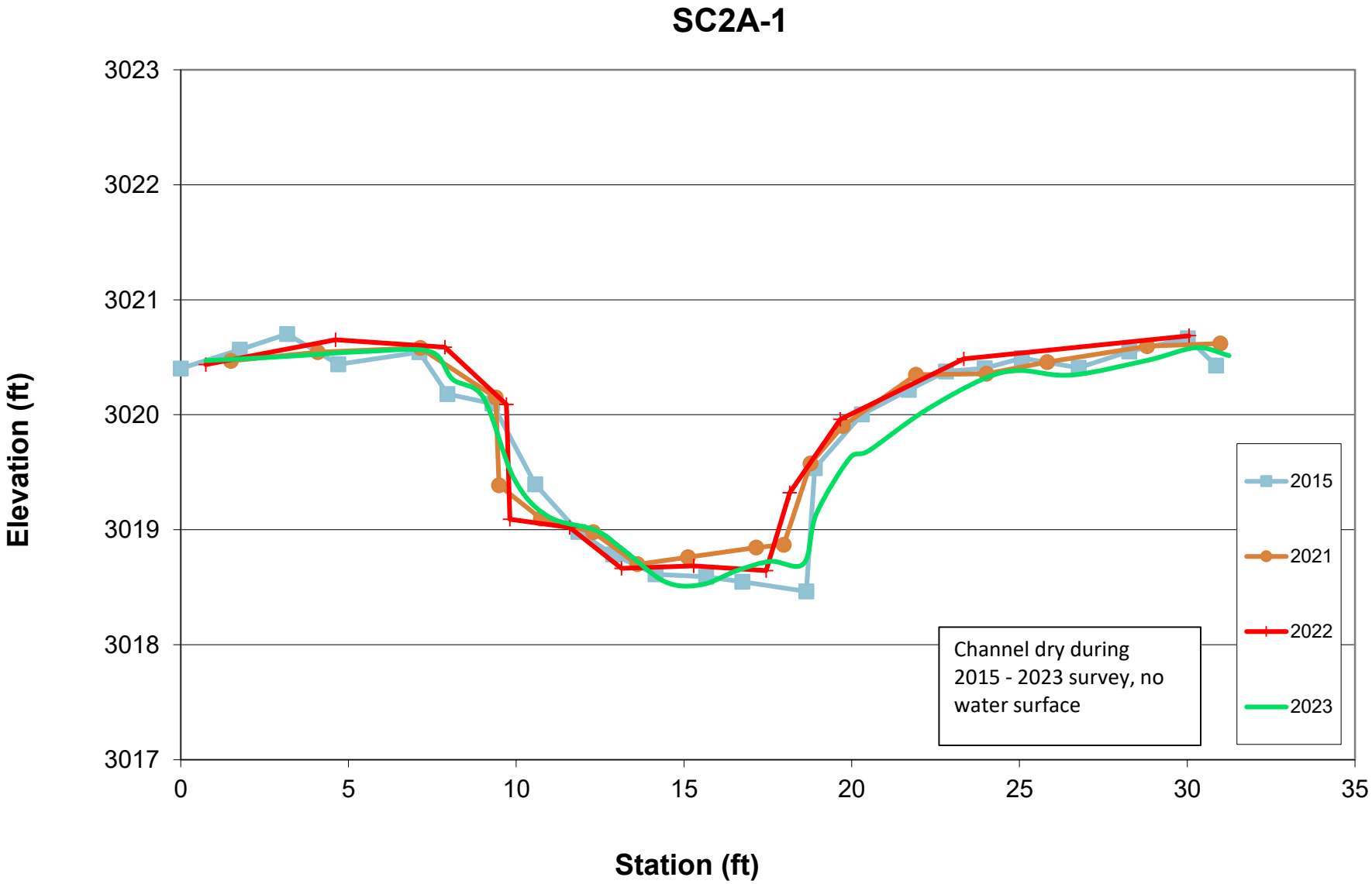
APPENDIX D

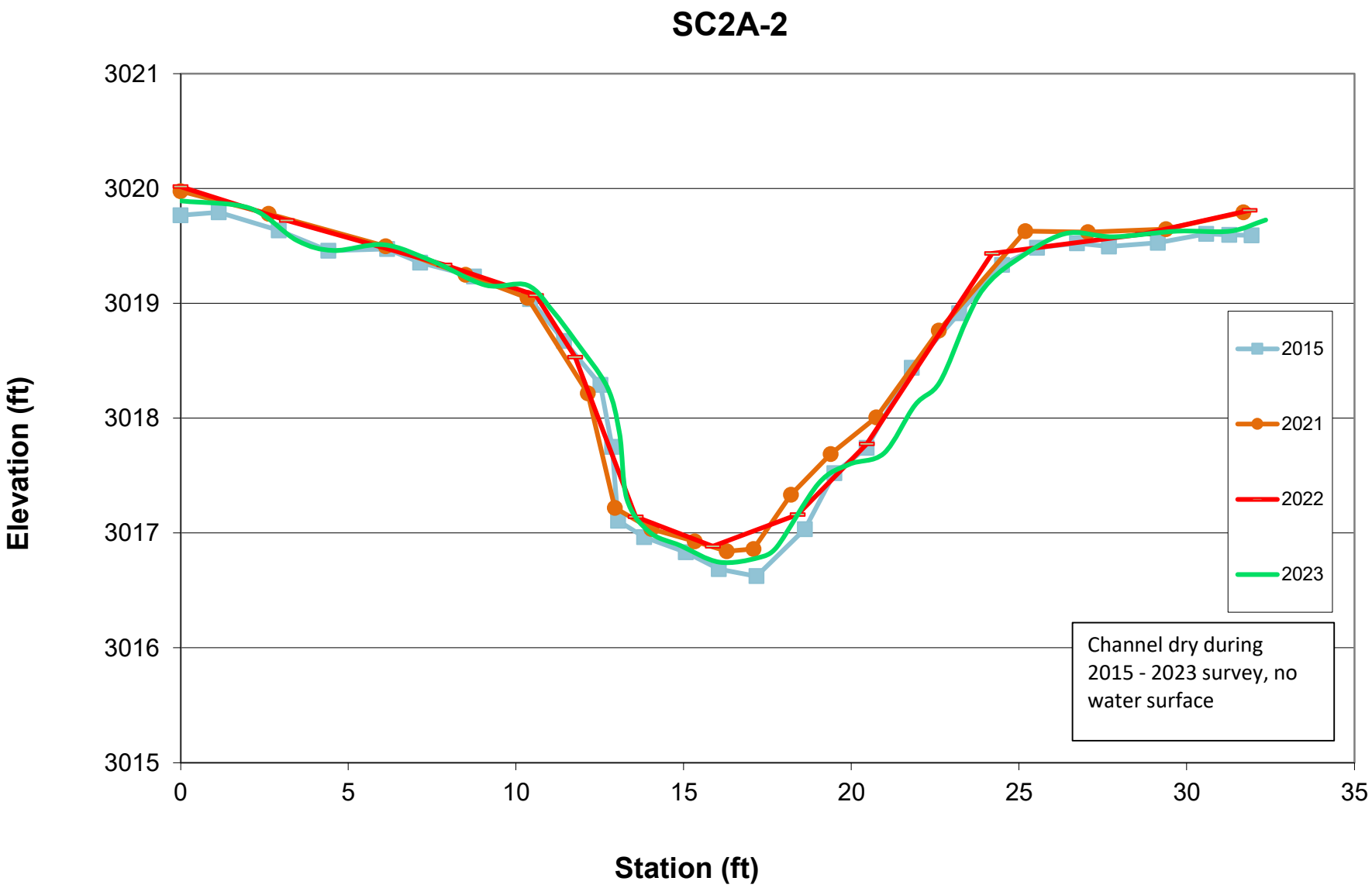
Surveyed Stream Cross Sections

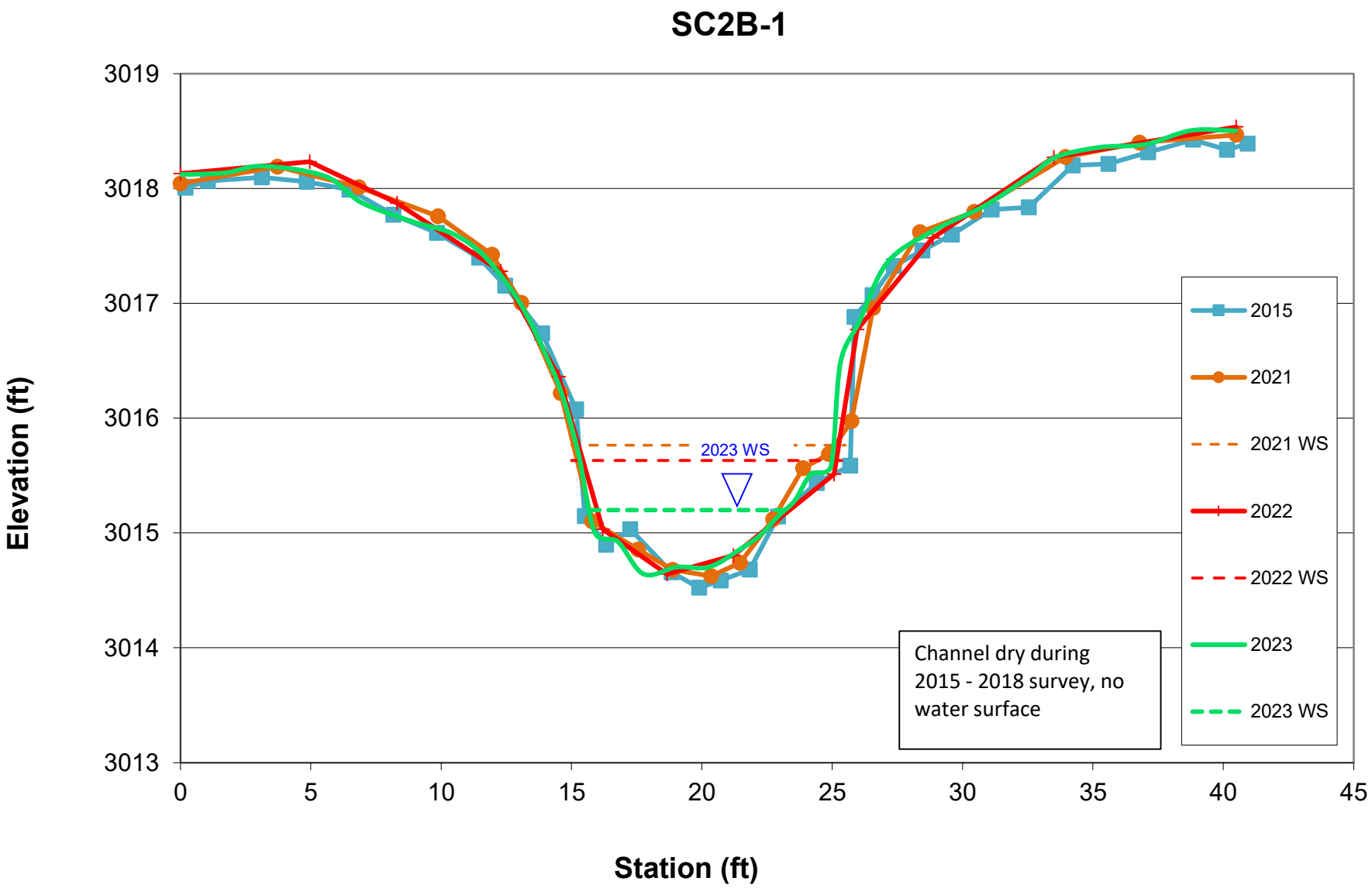
MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

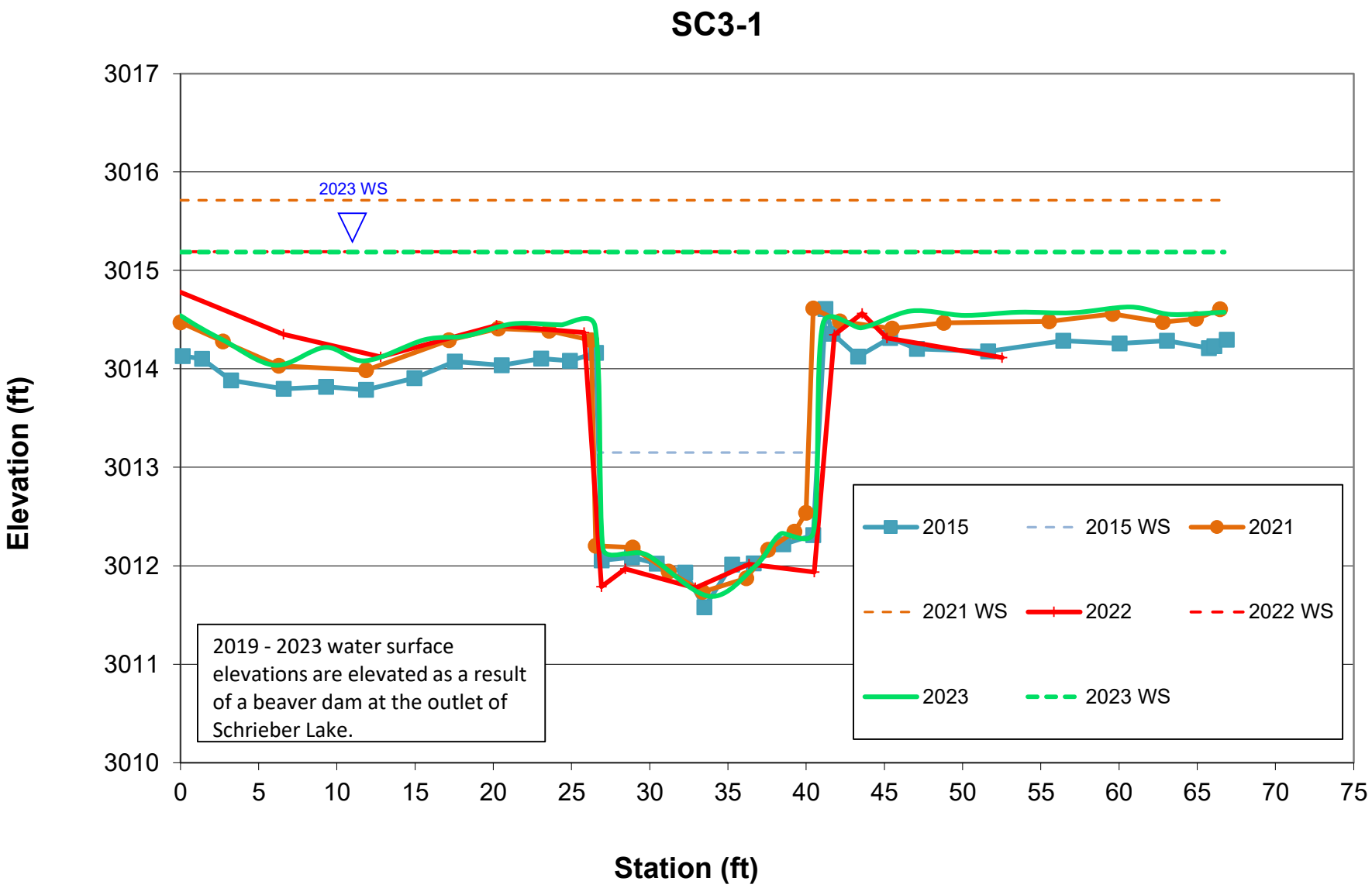

SC1-1
Elevation (ft)
3031
3030
3029
3028
3027
3026
3025
3024
0
5
10
15
20
25
30
35
40
45
Station (ft)
2015
2021
2022
2023
Channel dry during 2015 - 2023 survey, no water surface

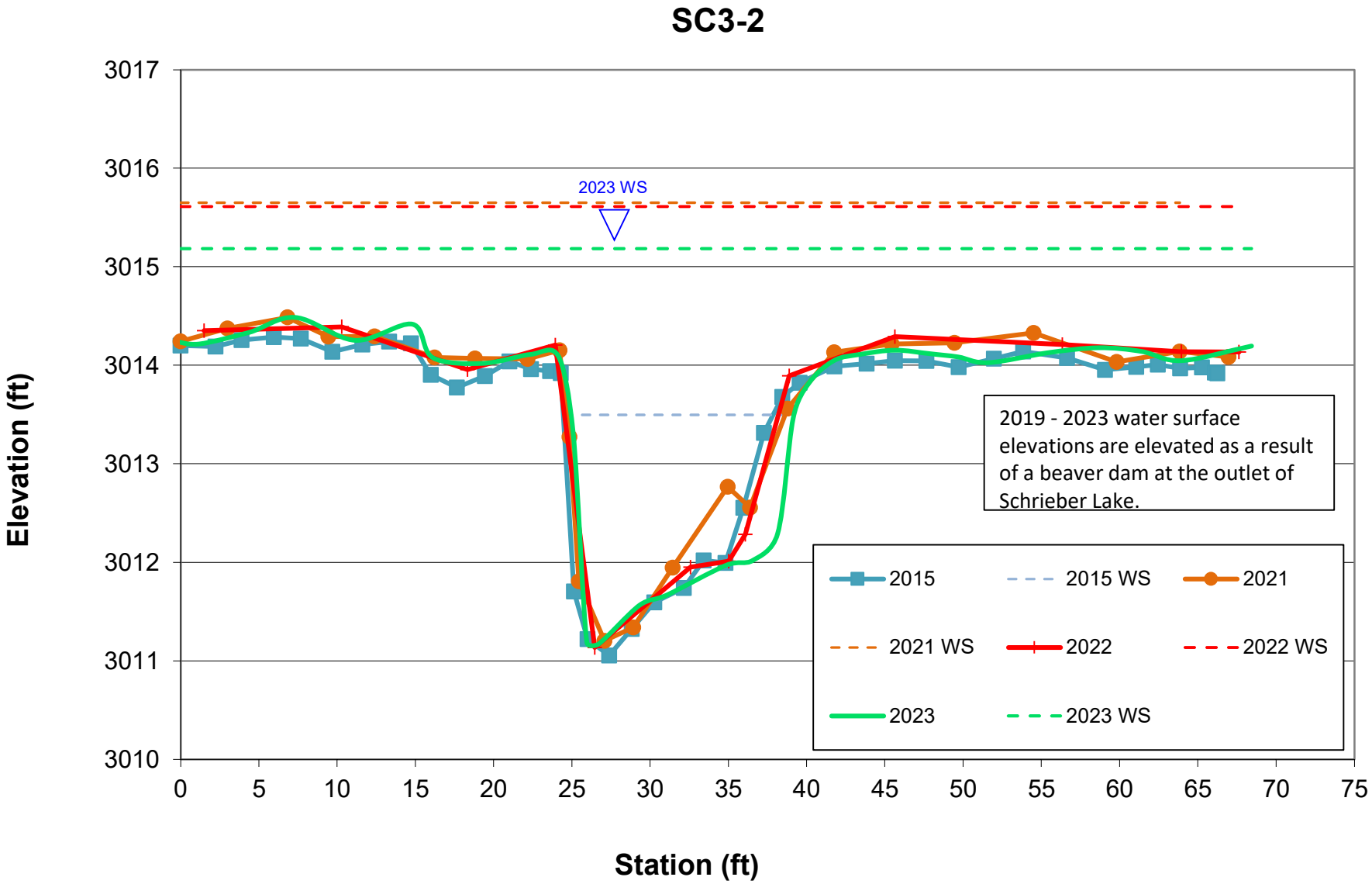

SC1-2
Elevation (ft)
3028
3027
3026
3025
3024
3023
3022
0
5
10
15
20
25
30
35
40
45
50
55
Station (ft)
2015
2021
2022
2023
Channel dry during 2015 - 2023 survey, no water surface

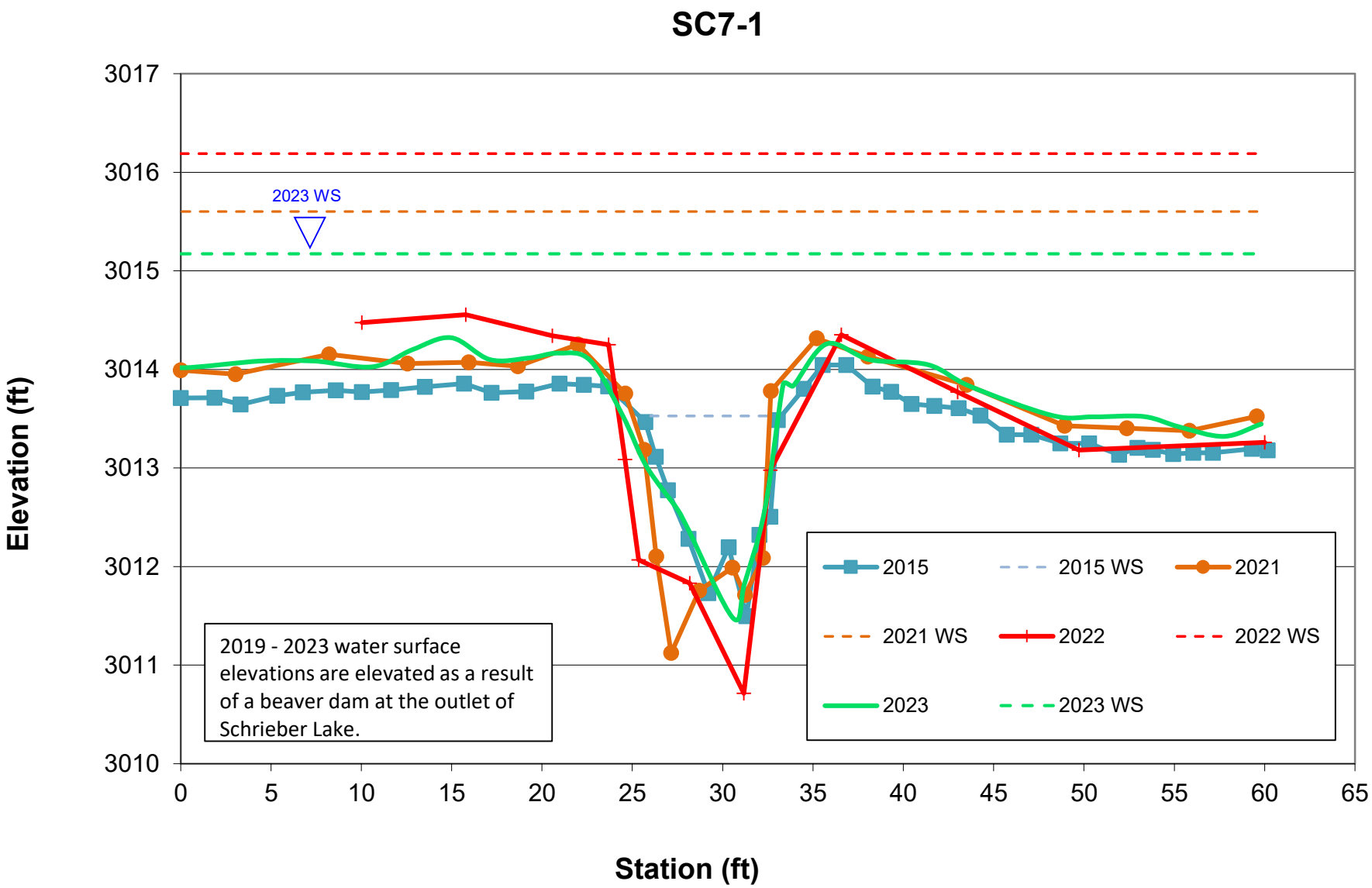

SC2A-1
Elevation (ft)
3023
3022
3021
3020
3019
3018
3017
0
5
10
15
20
25
30
35
Station (ft)
2015
2021
2022
2023
Channel dry during 2015 - 2023 survey, no water surface

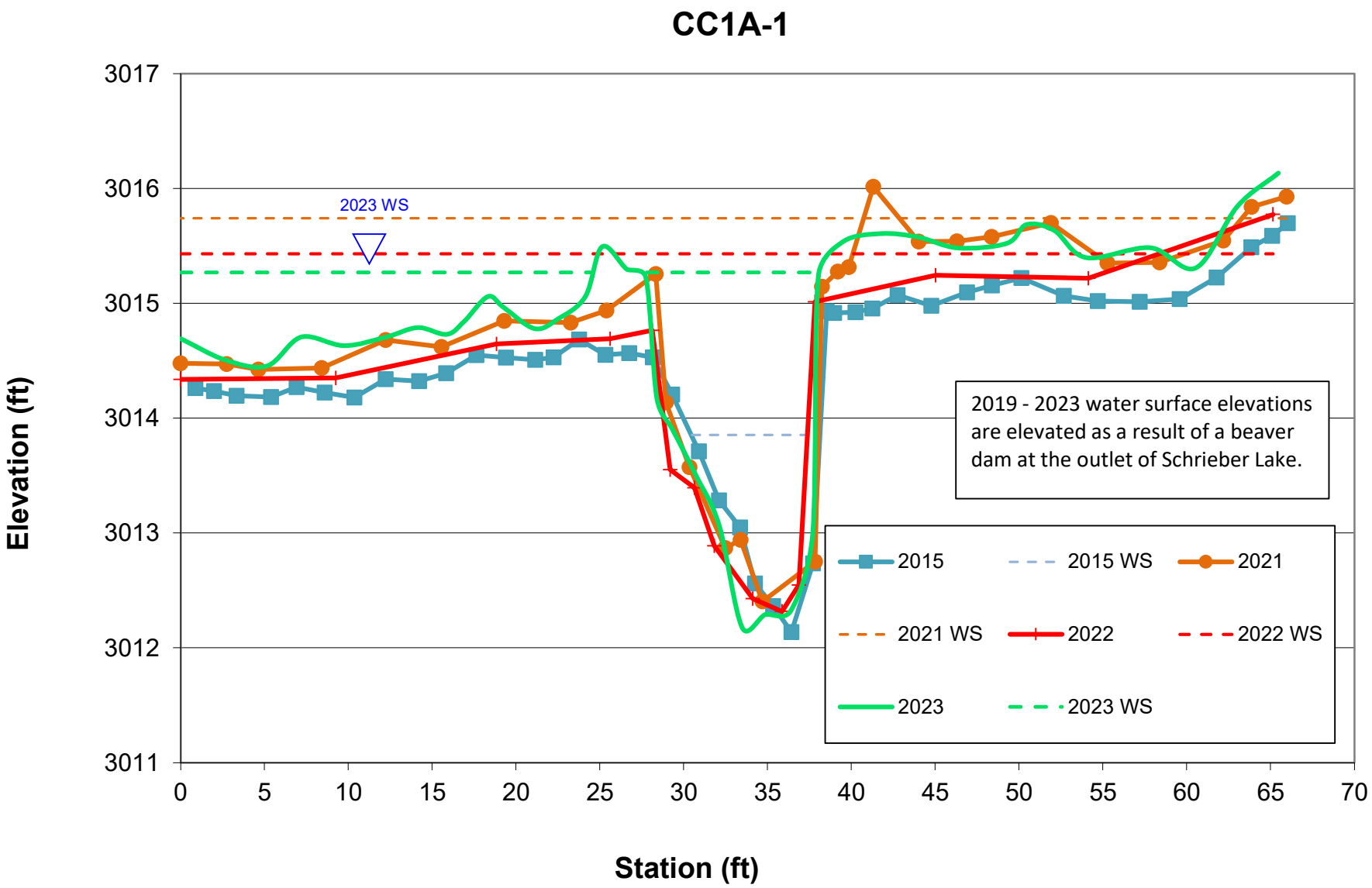

SC2A-2
Elevation (ft)
3021
3020
3019
3018
3017
3016
3015
0
5
10
15
20
25
30
35
Station (ft)
2015
2021
2022
2023
Channel dry during 2015 - 2023 survey, no water surface

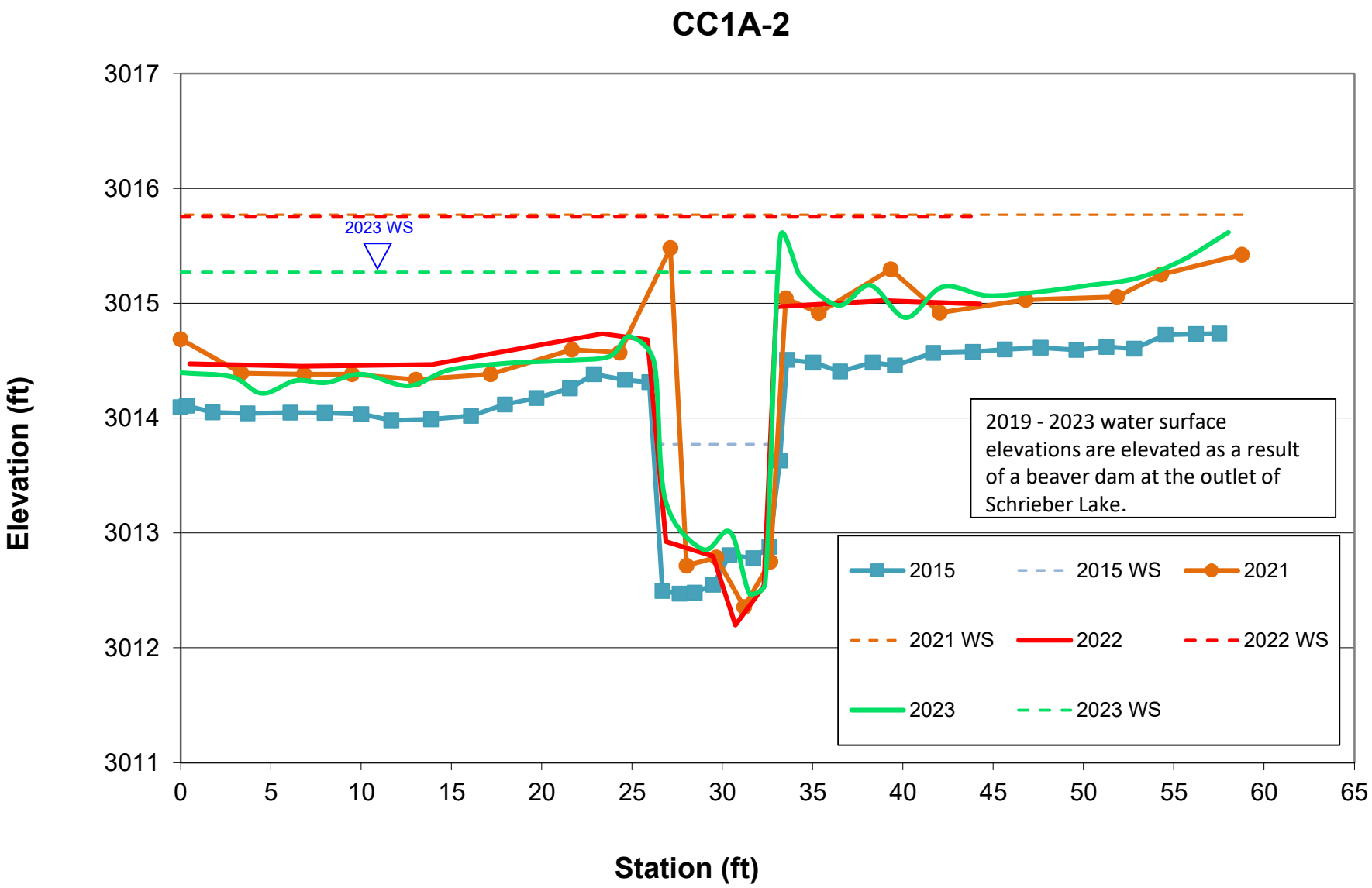

SC2B-1
Elevation (ft)
3019
3018
3017
3016
3015
3014
3013
0
5
10
15
20
25
30
35
40
45
Station (ft)
2023 WS
2015
2021
2021 WS
2022
2022 WS
2023
2023 WS
Channel dry during 2015 - 2018 survey, no water surface

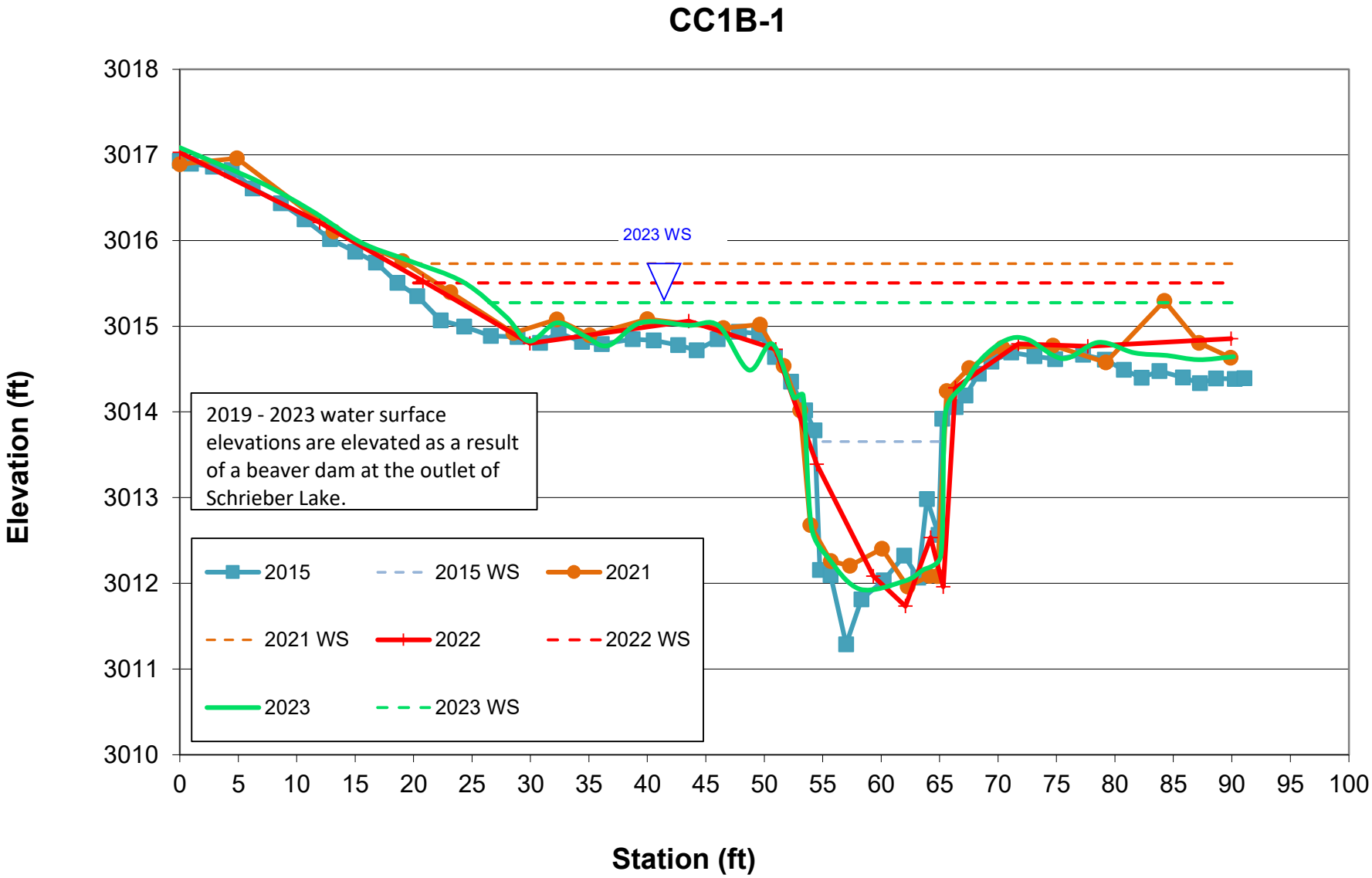

SC3-1
Elevation (ft)
Station (ft)
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
2023 WS
2019 - 2023 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2021
2021 WS
2022
2022 WS
2023
2023 WS


SC3-2
Elevation (ft)
Station (ft)
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
2023 WS
2019 - 2023 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2021
2021 WS
2022
2022 WS
2023
2023 WS


SC7-1
Elevation (ft)
Station (ft)
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
2023 WS
2019 - 2023 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2021
2021 WS
2022
2022 WS
2023
2023 WS


CC1A-1
Elevation (ft)
Station (ft)
3017
3016
3015
3014
3013
3012
3011
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
2023 WS
2019 - 2023 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2021
2021 WS
2022
2022 WS
2023
2023 WS


CC1A-2
Elevation (ft)
Station (ft)
3017
3016
3015
3014
3013
3012
3011
0
5
10
15
20
25
30
35
40
45
50
55
60
65
2023 WS
2019 - 2023 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2021
2021 WS
2022
2022 WS
2023
2023 WS


CC1B-1
Elevation (ft)
Station (ft)
3018
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
2023 WS
2019 - 2023 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2021
2021 WS
2022
2022 WS
2023
2023 WS