SCHRIEBER LAKE MITIGATION SITE

Project Overview

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

Watershed: Watershed #1 – Kootenai River Basin

Monitoring Year: 2022

Years Monitored: 8th 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 12, 2022

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 completed in 2022.

Specific recommendations for any additional corrective actions: The MDT has an ongoing weed-control program and will assess the need for additional weed treatments in 2023.

Anticipated Wetland Credit Acres: 13.40

Wetland Credit Acres Generated to Date: 14.81

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 2022 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 aerial 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 aerial 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 2022.
	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. The upland buffer area was dominated by predominately non-native grass species. Total aerial cover of vegetation was estimated 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 across the site have been monitored and mapped during each post-construction monitoring event. MDT administers 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 aerial cover of non- weed species by the end of the monitoring period.	Y	Y	All riparian vegetation transects exhibited 50 percent or greater aerial cover of non- weed species along both Schrieber and Coyote Creeks.
	Combined aerial cover of riparian and streambank vegetation communities is 70 percent or greater.	Y	Y	Combined aerial 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 2022.

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 a distance of 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 delineated at the Schrieber Lake mitigation site in 2022 was 55.53 acres, a decrease of 0.05 acres since 2021 due to a reduction in open water (Table 2; see maps in Appendix A). Total delineated wetlands across the site increased by 1.43 acres to 42.33 acres in 2022. Open water accounted for an estimated 12.20 acres of the site, including areas within Cells 1-10 and the preservation area northwest of Schrieber Lake (4.20 acres), and Schrieber Lake (8.00 acres). The extensive wetland development at this site is the result of the excavation of wetland cells, construction of channel plugs, and the restoration of 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 has changed the site's hydrologic regime, resulting in an expansion of perennial deep-water inundation observed within wetland vegetation communities. Since the appearance of the beaver dam in 2020, open water, in addition to Schrieber Lake, has reduced from 6.24 acres in 2020 to 4.20 acres in 2022. This decrease in open water is due to hydrophytic vegetation species colonizing recently inundated areas. Shifts in species cover and dominance were observed within several wetland vegetation communities and are expected to continue as increased hydrology persists across the site.

Table 2. Upland, Wetland, & Aquatic Habitat Acreage Delineated From 2015 Through 2022

Habitat Type	2015 Acres	2016 Acres	2017 Acres	2018 Acres	2019 Acres	2020 Acres	2021 Acres	2022 Acres
Uplands	**52.60**	**52.60**	**52.60**	**52.60**	**52.60**	**49.47**	**49.12**	**49.17**
Wetlands								
USFS wetlands (no credit)	1.25	1.25	1.25	1.25	1.25	1.66	1.66	1.66
MDT wetlands	37.65	37.65	37.65	37.65	37.65	34.43	35.43	36.77
Riparian Buffer (no wetland credit)	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
Total Delineated Wetlands	**42.84**	**42.84**	**42.84**	**42.84**	**42.84**	**39.99**	**40.90**	**42.33**
Open Water								
Schrieber Lake* (no credit)	8.26	8.26	8.26	8.26	8.26	8.00	8.00	8.00
Open Water* (Cells 1-10 & Preservation Area northwest of Schrieber Lake)	N/A	N/A	N/A	N/A	N/A	6.24	5.68	4.20
Streams								
Schrieber & Coyote Creeks (no wetland credit)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Wetland and Aquatic Habitat	**52.10**	**52.10**	**52.10**	**52.10**	**52.10**	**55.23**	**55.58**	**55.53**
Project Area	**104.70**	**104.70**	**104.70**	**104.70**	**104.70**	**104.70**	**104.70**	**104.70**

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

Vegetation – A total of 119 plant species have been identified at the site from 2015 through 2022, with nine new species identified during the 2022 monitoring event. Six wetland, five upland, and one open water community types were identified and mapped at the mitigation site in 2022 (Figure A-3, Appendix A). Dominant plant species observed within each community are listed on the Wetland Mitigation Site Monitoring form (Appendix B). Upland Type (UT) 14 – *Alopecurus pratensis* was identified for the first time in 2022 in the northern "pan handle" of the site. This UT replaced some of U 1 due to shifts in species cover, from a dominance of creeping wild rye (*Elymus repens*) and smooth brome (*Bromus inermis*) to a more mesic composition and dominated by field meadow-foxtail (*Alopecurus pratensis*).

The vegetation community types, including one open water community type, identified on the site in 2022 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 2 – *Betula pumila/Rhamnus alnifolia*
- Wetland Type 3 – *Phalaris arundinacea/Carex* spp.
- Wetland Type 4 – *Carex simulata/Persicaria amphibia*
- Wetland Type 6 – *Salix bebbiana/Phalaris arundinacea*
- Wetland Type 8 – *Carex* spp.
- Wetland Type 10 – *Typha latifolia*
- 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 that has impounded surface water within Wetland Type 3 continued in 2022. Inundation levels within Wetland Type 3 were an average of 1.5-3 feet, nearly the same as in 2021. 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*). 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.

Vegetation cover was measured along three belt transects (T-1, T-2, and T-3) in 2022 (Figure A-2, Appendix A). Photographs of the transect endpoints are provided in Appendix C. In 2022, 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. The expansion of perennial surface water noted in 2022 was primarily observed within the wetland communities along all three transects (i.e., Wetland Types 3, 4, and 6) in areas that exhibited greater than 5% emergent vegetation and were too small (i.e., less than 0.1-acre in size) to classify as Open Water Type 11. This expansion was captured by increasing its cover class within the associated wetland community. In Tables 3 through 5, the "% transect length comprising open water" summarizes the length of transect occupied by Open Water Type 11) and does not include the perennial surface water expansion observed within wetland 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" value is analogous to perennial surface water within the wetland communities found along the transects.

Table 3 summarizes the data for T-1 from 2016 through 2022. T-1 is 284 feet long and intersects Wetland Type 3 and Open Water Type 11. Hydrophytic vegetation cover accounted for 60 percent of the transect in 2022, a 15 percent decrease since 2021, due to the perennial inundation present along the transect. Unvegetated surface water, 0.5-2.5 feet deep, accounted for the remaining 40 percent of the transect in 2022.

Table 3. Data Summary for T-1 From 2016 Through 2022 at the Schrieber Lake Site

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

Table 4 summarizes the data for T-2 from 2016 through 2022. T-2 is 280 feet long and intersects Wetland Types 3 and 6. Hydrophytic vegetation communities accounted for 100 percent of the transect in 2022. Hydrophytic vegetation cover accounted for 80 percent of the transect in 2022, a five percent decrease since 2021 due to the perennial inundation present along the transect. Unvegetated surface water, 2-2.5 feet deep, accounted for the remaining 20 percent of the transect in 2022.

Table 4. Data Summary for T-2 From 2016 Through 2022 at the Schrieber Lake Site

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

Table 5 summarizes the data for T-3 from 2016 through 2022. T-3 is 584 feet long and intersects Wetland Types 3 and 4. Hydrophytic vegetation communities accounted for 100 percent of the transect in 2022. Hydrophytic vegetation cover decreased from 90 to 85 percent of the transect in 2022 due to the perennial inundation present along the transect. Unvegetated surface water, 0.5-2 feet deep, accounted for the remaining 15 percent of the transect in 2022.

Table 5. Data Summary for T-3 From 2016 Through 2022 at the Schrieber Lake Site

Monitoring Year	2016	2017	2018	2019	2020	2021	2022
Transect Length (feet)	**584**	**584**	**584**	**584**	**584**	**584**	**584**
Vegetation Community Transitions Along Transect	2	2	2	2	1	1	1
Vegetation Communities Along Transect	3	3	3	3	2	2	2
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2	2	2
Total Vegetative Species	11	10	12	9	6	6	6
Total Hydrophytic Species	10	8	10	7	6	6	6
Total Upland Species	1	2	2	2	0	0	0
Estimated % Total Vegetative Cover	100	100	100	100	95	90	85
Estimated % Unvegetated Surface Water	0	0	0	0	5	10	15
% Transect Length Comprising Hydrophytic Vegetation Communities	94	94	94	97	100	100	100
% Transect Length Comprising Upland Vegetation Communities	6	6	6	3	0	0	0
% Transect Length Comprising Open Water	0	0	0	0	0	0	0
% Transect Length Comprising Mudflat	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), and field bindweed (*Convolvulus arvensis*). The most common noxious weed species observed on site was Canada thistle (Figure A-3, Appendix A). MDT has an ongoing weed control program for their mitigation sites and treated noxious weed infestations at this site between June 28th and July 1st, 2021.

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 at the site.

Hydrology – During the 2022 investigation, the average depth of surface water across the site was estimated at 2.0 feet, with a range of depths from 0.25 to 5 feet. The deepest standing water is located within many of the excavated cells and within the creek channels. Approximately 80 percent of the wetlands were inundated during the 2022 site visit. The surface-water depth at the emergent vegetation and open-water boundary was estimated at 2.0 feet. In 2022, the beaver dam initially documented in 2019 at the outlet of Schrieber Lake was still present and impounding water. MDT is working with MFWP to remove the beaver to reduce the depth of surface water. Schrieber Lake and the remaining open water areas represented 8.00 acres and 4.20 acres of open water habitat, respectively, during the 2022 monitoring event. These areas are depicted as Open Water Type 11 in Figure A-3 in Appendix A.

The majority of wetland habitat exhibited standing surface water in 2022 as it did in 2021, and average water depths across the site decreased slightly from 2021, 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 2022 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 2022 (Appendices A and B). Wetland test pits were characterized by soil textures ranging from loamy sand to clay hemic. 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 2022 (Appendix B). The Assessment Area (AA) includes all delineated wetlands, including the creditable wetlands (36.77 acres), wetlands within the riparian buffers of Schrieber and Coyote Creeks (3.90 acres), Schrieber Lake and remaining open water areas (12.20 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 (1.66 acres). The wetlands in the AA received a Category I rating with 92.7% of the total possible points in 2022. 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.

Wildlife – Twelve bird species were identified in 2022 at the Schrieber Lake site. In addition to the 12 bird species, four northern Columbia spotted frogs, four white-tailed deer, and a Richardson's ground squirrel were observed (Appendix B). Mountain lion and raccoon tracks were also observed.

Photographs – Ten photo points were initially established in the project area in 2015. Photographs were taken at all ten photo point locations during the 2022 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 2022 data were compared to the previous surveys to assess stream channel stability. In 2022, 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 channel morphological changes occurred between 2021 and 2022. The nine cross-sections within the 2022 wetland boundary, exhibited surface water elevations lower than or equal to those surveyed in 2021 except SC7-1, which exhibited an approximately 0.5-foot surface water elevation increase. Surface water elevations across the rest of the transects decreased by 0.1 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 2022, while vegetation cover increased along this reach, it was otherwise consistent with 2021 observations, which included a dominance by shallow-rooted spreading bent (*Agrostis stolonifera*) and 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, and increased vegetation cover observed in 2022 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 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 6.

Data collected during the 2022 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 currently 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, along with its status in meeting the success criteria and generating the anticipated stream mitigation credits. To date, the site has generated 34,349.67 stream credits, which is 2,392.20 credits less than the original projection.

Table 6. 2022 Riparian and Stream Mitigation Credits for the Schrieber Lake Site

Channel Segment	Reach	Side	Predicted Credits	2022 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 creating 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 7 summarizes the estimated wetland credits based on the pending USACE-approved credit ratios and the wetland delineation completed in July 2022. The 2022 wetland delineation identified 36.77 acres of creditable wetlands and 4.20 acres of creditable 'open water' within the mitigation site.

Creditable wetland acreage included 5.60 acres of created wetland, 1.10 acres of re-established wetlands, 4.69 acres of enhanced wetlands, and 25.38 acres of preserved wetlands, with 2.94 acres of upland buffer around the perimeter of the delineated wetland. In accordance with the USACE-approved performance standard for this site, open water areas with submerged and/or floating vegetation will be considered successful and creditable. The open water areas at the site are considered successful and creditable as they exhibited less than 5% emergent vegetation and a diversity of submerged and floating aquatic macrophytes. Creditable open water acreage included 2.30 acres of created open water, 1.32 acres of restored open water, and 0.58 acres of preserved open water. Schrieber Lake has never received mitigation credit at this site and is therefore excluded from Table 7. The 2022 estimated credit acres for this site have exceeded the proposed credit acres. To date, a total of 14.81 credit acres have been developed at this site. Figure A-4 (Appendix A) shows the location of wetlands based on credit type.

Table 7. Summary of Wetland Mitigation Credits at the Schrieber Lake Site in 2015, and 2020 through 2022

Mitigation Type	Total Proposed Acreage	Ratio	Proposed Credit Acres	2015 Delineated Acreage	2015 Credit Acres	2020 Delineated Acreage	2020 Credit Acres	2021 Delineated Acreage	2021 Credit Acres	2022 Delineated Acreage	2022 Credit Acres
Creation	3.06	1:1	3.06	4.80	4.80	4.69	4.69	5.06	5.06	5.60	5.60
Creation 'Open Water'[(b)]	N/A	TBD	N/A	--	--	2.56	TBD	2.54	TBD	2.30	TBD
Restoration (Re-establishment)	2.53	1.5:1	1.69	2.42	1.62	1.14	0.76	1.14	0.76	1.10	0.73
Restoration 'Open Water' [(b)]	N/A	TBD	N/A	--	--	1.28	TBD	1.28	TBD	1.32	TBD
Enhancement areas- Carr Shrubland expansion	4.53	3:1	1.51	4.77	1.59	4.69	1.56	4.69	1.56	4.69	1.56
Enhancement 'Open Water' [(b)]	N/A	TBD	N/A	--	--	0.08	TBD	0.08	TBD	0	N/A
Preservation-Existing Fen-Carr-Carex Areas	25.60	4:1	6.40	25.66	6.42	24.11	6.03	24.46	6.12	25.38	6.35
Preservation 'Open Water' [(b)]	N/A	TBD	N/A	--	--	2.13		1.61	TBD	0.58	TBD
Upland Buffer (50 feet)[(a)]	3.81	5:1	0.76	8.42	1.68	3.81	0.76	3.81	0.76	2.94	0.59
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**	**44.46**	**13.78**	**44.65**	**14.24**	**43.89**	**14.81**

(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 (4.20 acres) 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 2022 functional unit credits summary is summarized in Table 8. A total of 145.25 functional unit credits were generated at the Schrieber Lake site after applying the appropriate mitigation ratios to the 2022 wetland acreage and multiplying that value by the points generated from the assessment area.

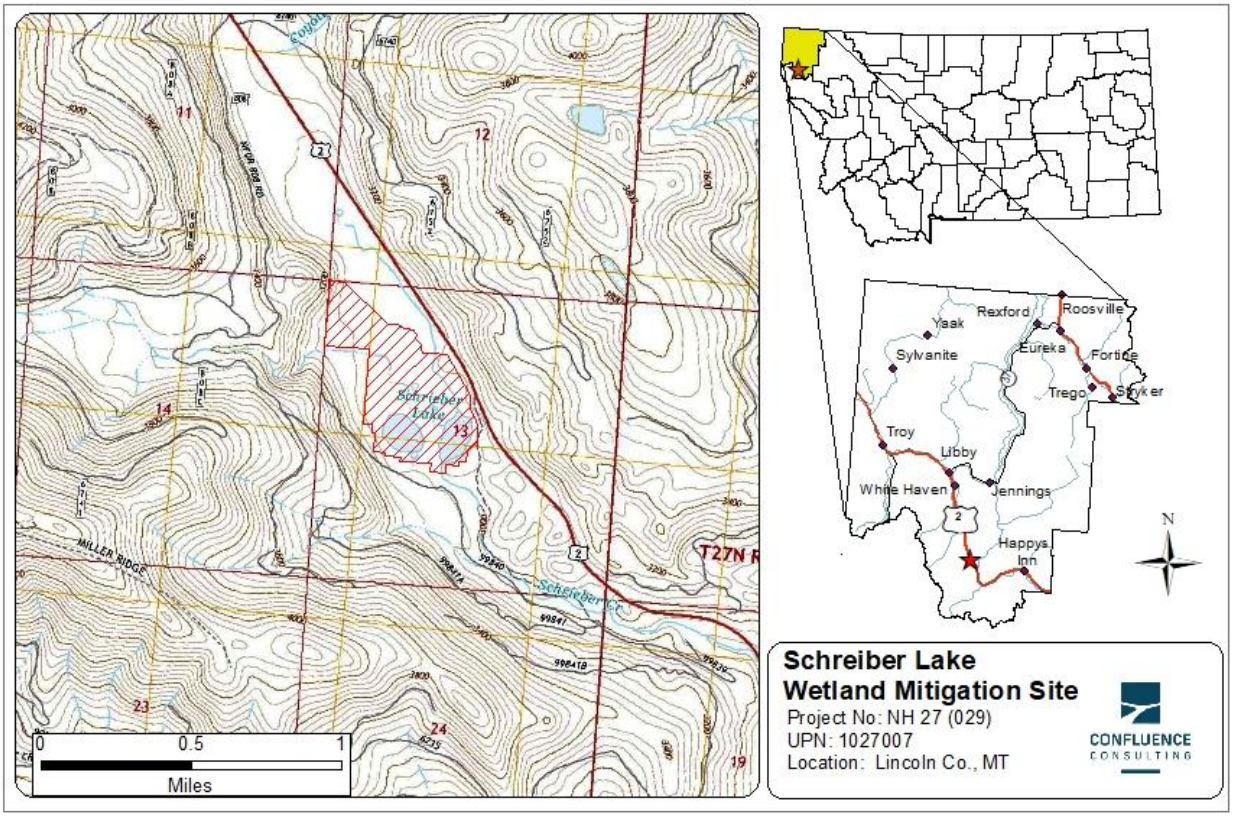
Table 8. Functional Unit Credits Summary for Schrieber Lake

Mitigation Type	2022 Delineated Acreage	Ratio	2022 Mitigation Credit Acres	MWAM Actual Points[a]	Functional Unit Credits
Creation	5.60	1:1	5.60	10.20	57.12
Creation 'Open Water'	2.30	TBD	TBD	10.20	TBD
Restoration (Re-establishment)	1.10	1.5:1	0.73	10.20	7.45
Restoration 'Open Water'	1.32	TBD	TBD	10.20	TBD
Enhancement areas- Carr Shrubland expansion	4.69	3:1	1.56	10.20	15.91
Preservation-Existing Fen-Carr-Carex Areas	25.38	4:1	6.35	10.20	64.77
Preservation 'Open Water'	0.58	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 – 2022 Monitoring Activity Locations; Figure A-3 – 2022 Mapped Site Features; Figure A-4 – 2022 Wetland Credit Areas; Figure A-5 – 2022 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 eighth 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).

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 criteria in future monitoring events. No remedial actions are recommended at this time.

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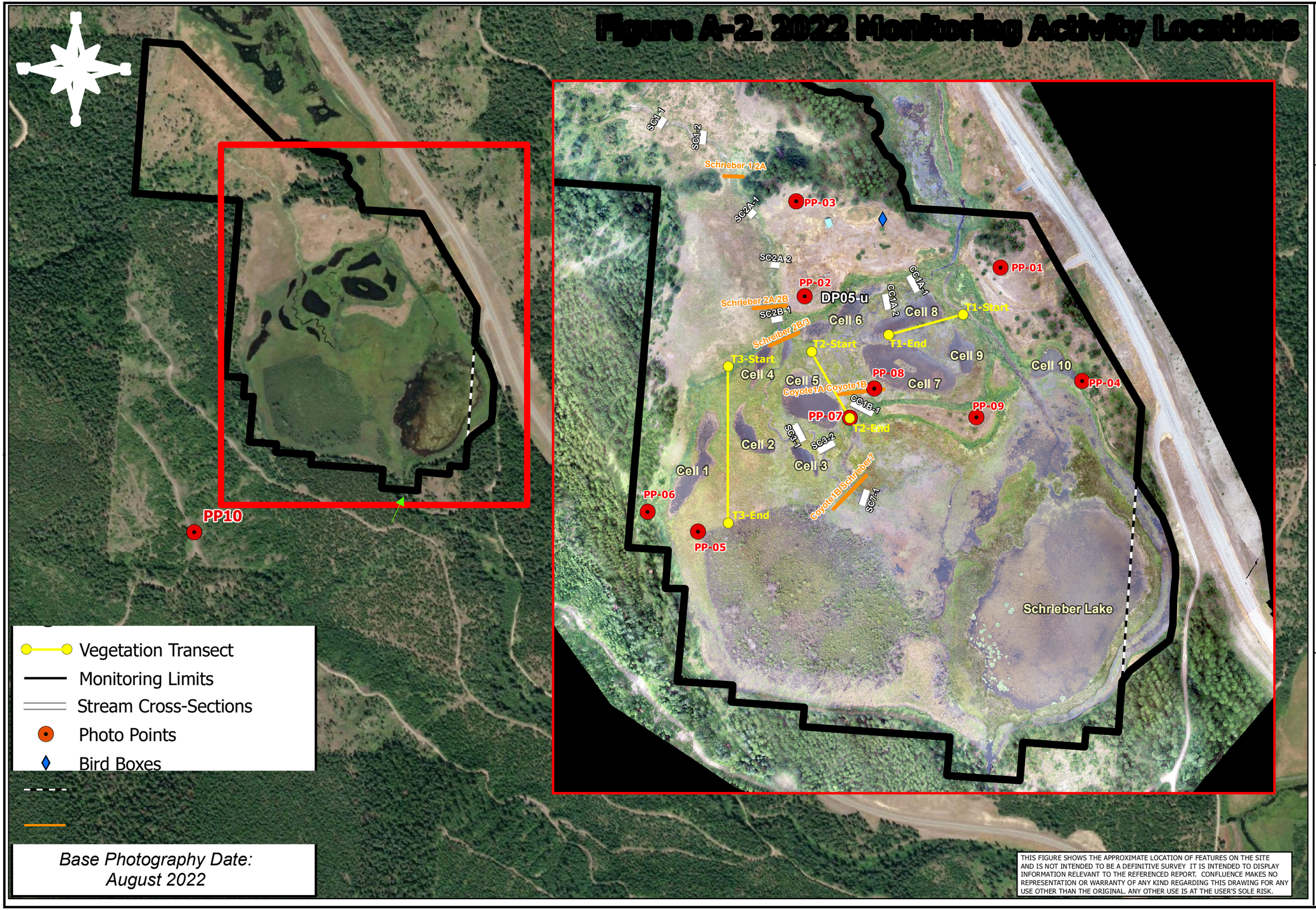
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APPENDIX A
PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

Figure A-2. 2022 Monitoring Activity Locations



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.

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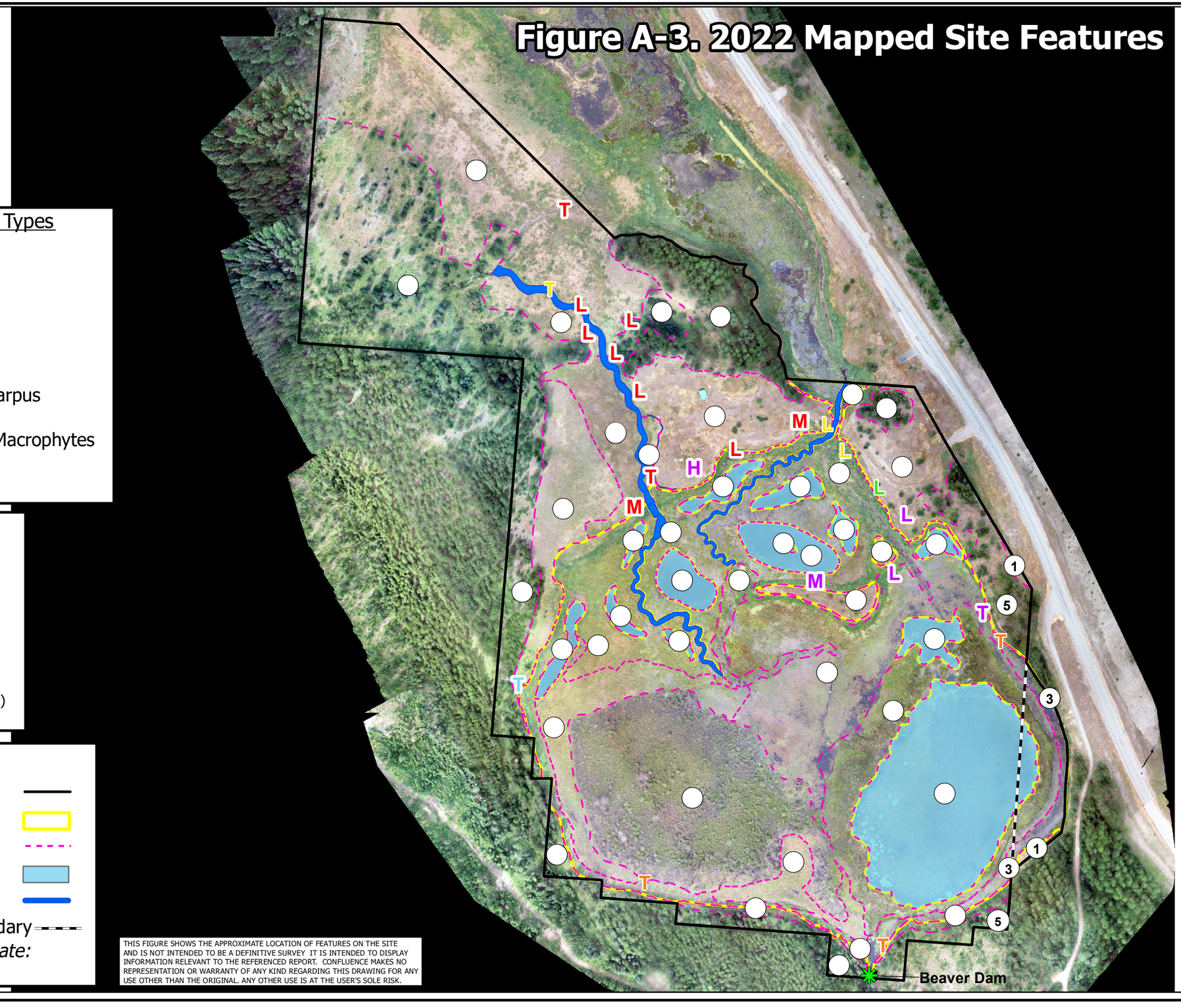
Schrieber Lake Mitigation Site
2022 Monitoring Activity Locations

300 150 0 300 600 900 1,200 Feet

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: October 2022
Project Manager: R. McEldowney
Drawn By: JT

File: X:\Project\MDT Wetland Mitigation 2\Mains\Schrieber Lake\2022\Monitor2022_MDT.mxd

Figure A-3. 2022 Mapped Site Features



N
W E
S

Vegetation Community Types
1. Elymus/Bromus
2. Betula/Rhamnus
3. Phalaris/Carex
4. Carex/Persicaria
5. Pseudostuga/Larix
6. Salix/Phalaris
8. Carex spp.
9. Craetagus/Symphoricarpus
10. Typha/Open Water
11. Open Water/Aquatic Macrophytes
13. Alopecurus/Phalaris
14. Alopecurus pratensis

Noxious Weeds
Convolvulus arvensis
Cirsium arvense
Centaurea stoebe
Hieracium aurantiacum
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
Vegetation Community
WUS (Open Water) 11
WUS (Stream Channel)
Approx MDT/USFS Boundary
Base Photography Date: August 2022

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.

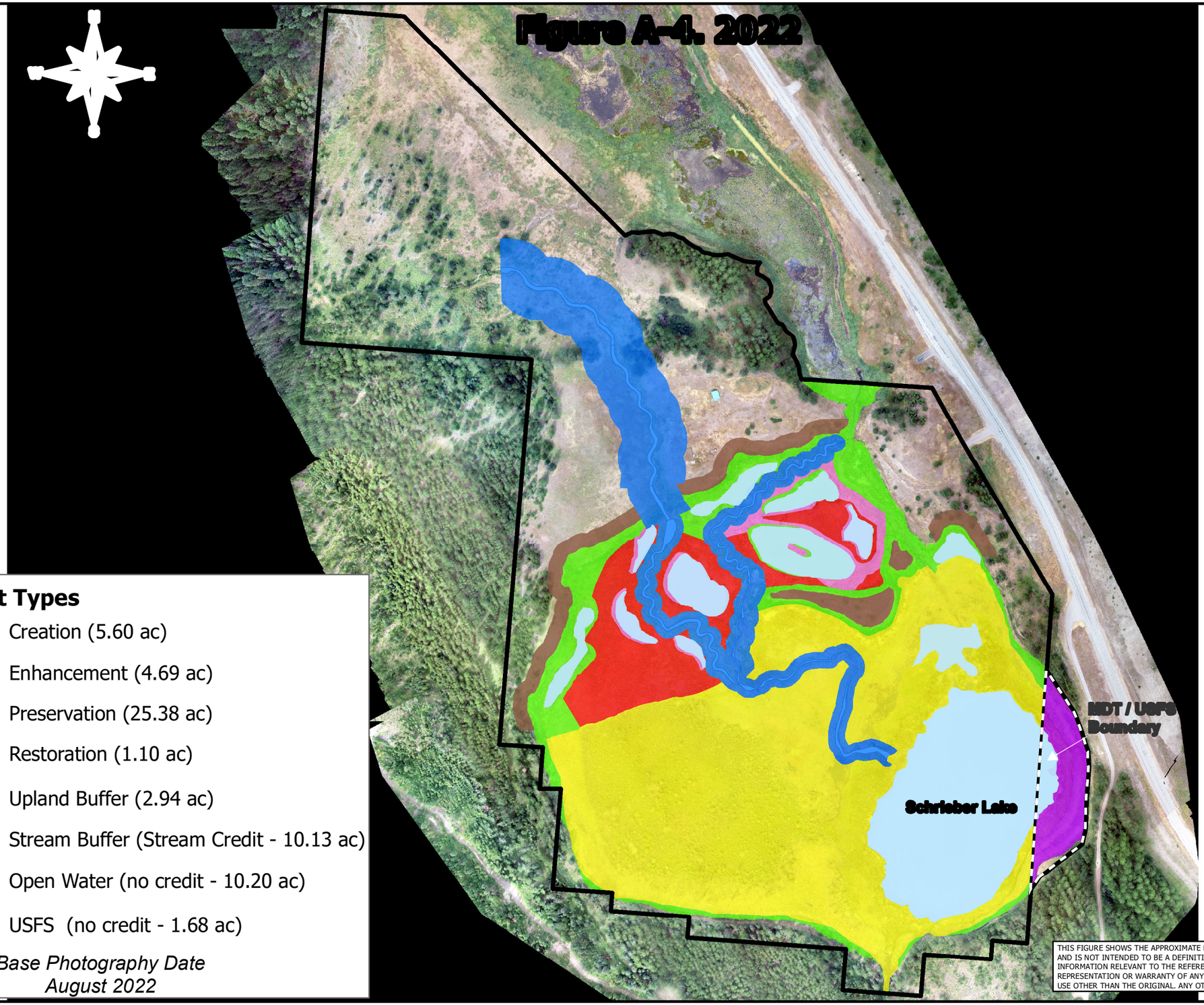
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Schrieber Lake Mitigation Site
2022 Mapped Site Features

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

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: October 2022
Project Manager: R. McEldowney
Drawn By: JT

Figure A-4. 2022 Wetland Credit Areas



Credit Types

- Creation (5.60 ac)
- Enhancement (4.69 ac)
- Preservation (25.38 ac)
- Restoration (1.10 ac)
- Upland Buffer (2.94 ac)
- Stream Buffer (Stream Credit - 10.13 ac)
- Open Water (no credit - 10.20 ac)
- USFS (no credit - 1.68 ac)

Base Photography Date
August 2022

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.

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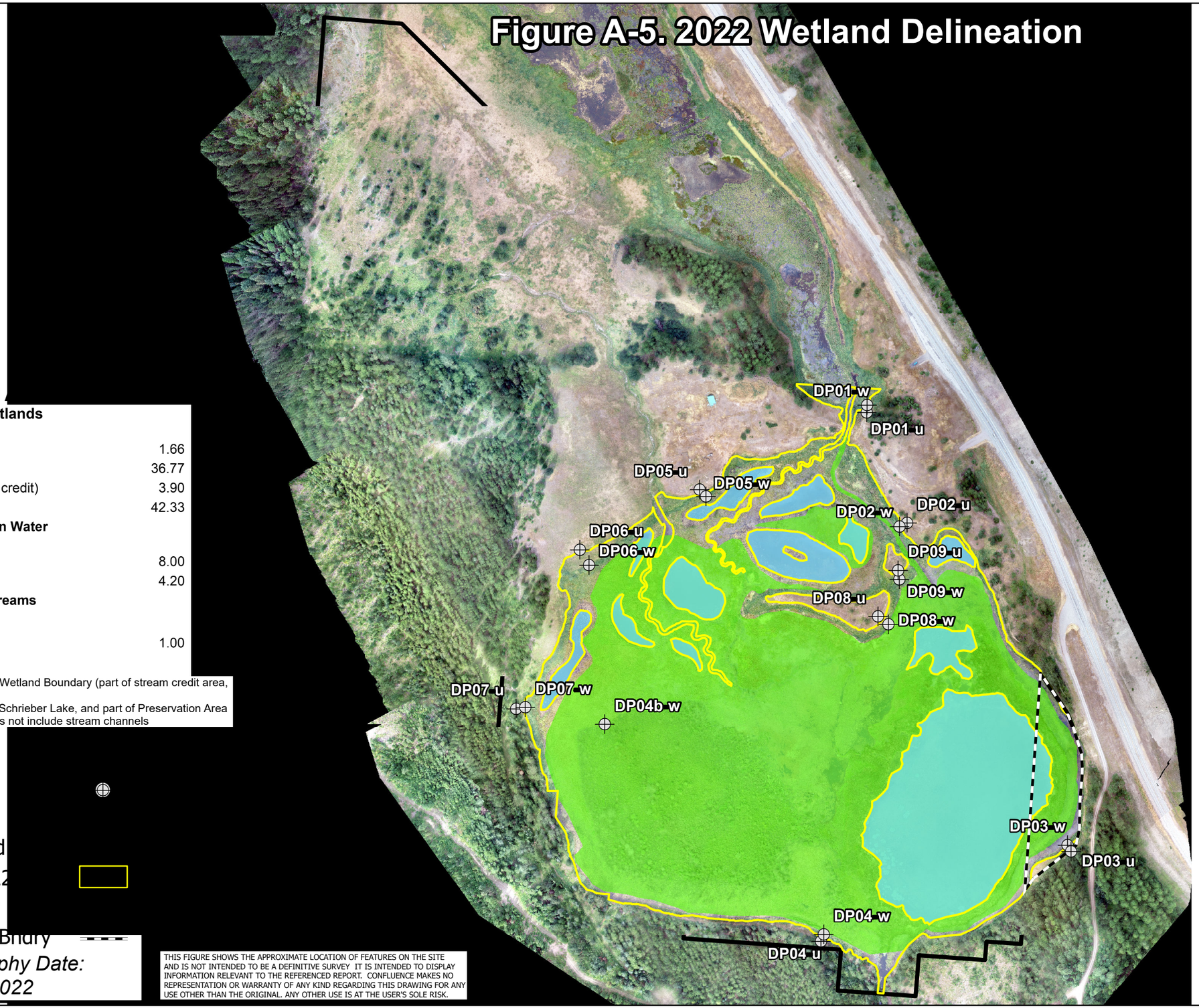
Schrieber Lake Mitigation Site
2022 Wetland Credit Areas

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

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: October 2022
Project Manager: R. McEldowney
Drawn By: JT

File: X:\Project\MDT Wetland Mitigation 2\Mains\Schrieber Lake\2022\2022CreditAcres_MDT.mxd

Figure A-5. 2022 Wetland Delineation



N
W E

Project Area
Pre-Project Wetland
2022 Wetland and

Wetlands

USFS wetlands (no credit)	1.66
MDT wetlands	36.77
Riparian buffer (no wetland credit)	3.90
Total delineated wetlands	42.33
Open Water	
Schrieber Lake (no credit)	8.00
Open Water (cells 1-10)	4.20
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
Wetland Area - 2022
Open Water - 2022
Approx MDT/USFS Bndry

Base Photography Date: August 2022

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
2022 Wetland Delineation

0 200 400 800 1,200 1,600 Feet

Project: NH 27 (029)
Location: Lincoln Co., Montana
Date Map Created: October 2022
Project Manager: R. McEldowney
Drawn By: JT

File: X:\Project\MDT Wetland Mitigation 2\Mains\Schrieber Lake\2022\DelIn2022_MDT.mxd

APPENDIX B
MONITORING FORMS

MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Schrieber Lake Assessment Date/Time 7/12/2022

Person(s) conducting the assessment: J. Trilling, S. Weyant. W. Fouts

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

MDT District: Missoula Milepost: 53.8

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

Initial Evaluation Date: 5/18/2015 Monitoring Year: 8 #Visits in Year: 1

Size of Evaluation Area: 105 (acres)

Land use surrounding wetland:

US Highway 2, US Forest Service, forested watershed, Weyerhaeuser lands to the south of the site.

HYDROLOGY

Surface Water Source: Schrieber Creek, Coyote Creek, precipitation, groundwater

Inundation: ☑ Average Depth: 2 **(ft)** Range of Depths: 0.1-5 **(ft)**

Percent of assessment area under inundation: 80 %

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

If assessment area is not inundated then are the soils saturated within 12 inches of surface: No

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

Surface water, saturation, high water table, hydrogen sulfide odor, geomorphic position, and FAC neutral test

Groundwater Monitoring Wells

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

Additional Activities Checklist:

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

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

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

Hydrology Notes:

Water depth refers to wetland cells, not including Schreiber Lake. 80% inundation does not include the uplands in the northern "panhandle" of the project area. Beaver dam at outlet of Schrieber Lake observed in 2019 through 2022 has created significant impact on water depths across site. Depths ranged from .1-5 feet. Deepest water in channels, excavated depressions, and Schrieber Lake.

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:** 12.44

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

Comments:

Upland community at edges of wetland boundaries across the site. Some of this CT on the east and west sides of the stream channel was replaced by new CT 14 in 2022 due to Alopecurus pratensis becoming the dominant species those areas.

Community # 2 **Community Type:** Betula pumila / Rhamnus alnifolia **Acres:** 10.7

Species	Cover class	Species	Cover class
Betula pumila	4	Carex spp.	3
Comarum palustre	1	Open Water	3
Persicaria amphibia	2	Phalaris arundinacea	2
Rhamnus alnifolia	2	Salix bebbiana	1
Salix boothii	1	Salix candida	1
Salix geyeriana	1		

Comments:

In 2022, many shrubs within the Carr preservation area were observed as dead or stressed from the perennial 2-3ft inundation level caused by the 2019-2022 beaver dam at the southern project boundary.

Community # 3 **Community Type:** Phalaris arundinacea / Carex spp. **Acres:** 13.47

Species	Cover class	Species	Cover class
Agrostis capillaris	1	Alopecurus arundinaceus	1
Alopecurus pratensis	1	Carex aquatilis	2
Carex lasiocarpa	2	Carex nebrascensis	1
Carex simulata	1	Carex utriculata	3
Carex vesicaria	1	Comarum palustre	1
Deschampsia caespitosa	0	Geum macrophyllum	0
Juncus tenuis	0	Lemna minor	1
Open Water	4	Persicaria amphibia	2
Phalaris arundinacea	4	Symphyotrichum spathulatum	0
Typha latifolia	1		

Comments:

In 2022 inundation levels were slightly lower than in 2021 with an average of 2-3 feet. The reed canary grass is continuing to decline in cover, although this decline appears to have slowed from 2021. The areas previously occupied by reed canary grass are converting to open water, Persicaria amphibia, and Carex species. In addition, this community increased in size due to the wetland boundary slightly expanding around the northern and western perimeter.

Community # 4 **Community Type:** Carex spp. / Persicaria amphibia **Acres:** 2.98

Species	Cover class	Species	Cover class
Carex aquatilis	3	Carex lasiocarpa	3
Carex nebrascensis	1	Carex simulata	1
Carex utriculata	4	Carex vesicaria	1
Comarum palustre	1	Geum macrophyllum	1
Open Water	3	Persicaria amphibia	3
Phalaris arundinacea	1	Symphyotrichum spathulatum	1

Comments:

Wetland community in southwestern portion of project area. This areas was inundated with 1- 1.5 feet of water.

Community # 5 Community Type: Pseudotsuga menziesii / Larix occidentalis **Acres:** 12.73

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	0	Larix occidentalis	2
Penstemon confertus	0	Pinus contorta	2
Pseudotsuga menziesii	3	Rosa woodsii	1
Symphoricarpos albus	2		

Comments:

Upland forested community at edges of wetland boundaries.

Community # 6 Community Type: Salix bebbiana / Phalaris arundinacea **Acres:** 0.81

Species	Cover class	Species	Cover class
Alnus incana	0	Crataegus douglasii	0
Open Water	4	Persicaria amphibia	1
Phalaris arundinacea	4	Salix bebbiana	2

Comments:

Many shrubs observed as stunted and dying due to deep perennial inundation, located along the restored confluence of Coyote and Schreiber Creeks.

Community # 8 Community Type: Carex spp. / **Acres:** 9.08

Species	Cover class	Species	Cover class
Carex aquatilis	1	Carex atherodes	1
Carex lasiocarpa	2	Carex utriculata	4
Carex vesicaria	1	Open Water	3
Persicaria amphibia	1	Phalaris arundinacea	2
Salix bebbiana	1	Salix candida	1
Scirpus microcarpus	1		

Comments:

In 2022, this community was inundated with an average of 2 feet of ponded water.

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:** 5.76

Species	Cover class	Species	Cover class
Aquatic macrophytes	1	Comarum palustre	2
Myriophyllum sibiricum	1	Nuphar polysepala	0
Open Water	4	Phalaris arundinacea	1
Typha latifolia	5		

Comments:

Wetland community type that surrounds Schrieber Lake. This CT increased in size because it absorbed some open water areas northwest of Schrieber Lake.

Community # 11 **Community Type:** Open Water / Aquatic macrophytes **Acres:** 12.17

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:** 11.61

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	2	Alopecurus pratensis	4
Bare Ground	2	Bromus inermis	3
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:** 2.21

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:

New 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.

Total Vegetation Community Acreage **94.7**

VEGETATION TRANSECTS

Site: Schrieber Lake Date: 7/12/2022

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

Interval Data:

Ending Station 93 Community Type: Phalaris arundinacea / Carex spp.

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

Ending Station 101 Community Type: Open Water / Aquatic macrophytes

Species	Cover class	Species	Cover class
Aquatic macrophytes	1	Open Water	5
Persicaria amphibia	2	Typha latifolia	1

Ending Station 284 Community Type: Phalaris arundinacea / Carex spp.

Species	Cover class	Species	Cover class
Carex lasiocarpa	2	Carex utriculata	3
Lemna minor	0	Open Water	4
Persicaria amphibia	2	Phalaris arundinacea	3
Typha latifolia	1		

Transect Notes:

Difficult to move through. Reed canary grass decreased in cover in 2022, and observed as absent, dead, dying, or floating mats in many areas along transect. Water depth .5-2.5 feet deep. Overall cover of the transect decreased where significant open water occurs. Boats were used to access transect.

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

Interval Data:

Ending Station 260 Community Type: Phalaris arundinacea / Carex spp.

Species	Cover class	Species	Cover class
Carex lasiocarpa	3	Carex utriculata	3
Carex vesicaria	2	Lemna minor	1
Open Water	3	Persicaria amphibia	3
Phalaris arundinacea	1		

Ending Station 280 Community Type: Salix bebbiana / Phalaris arundinacea

Species	Cover class	Species	Cover class
Open Water	2	Persicaria amphibia	1
Phalaris arundinacea	4	Salix bebbiana	0

Transect Notes:

This transect was innundated with 2-2.5 feet of water in 2022. Phalaris arundinacea was significantly reduced in cover in 2022 due to the prolonged innundation. This transect was waded through in 2022.

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

Interval Data:

Ending Station 484 Community Type: Phalaris arundinacea / Carex spp.

Species	Cover class	Species	Cover class
Carex aquatilis	3	Carex lasiocarpa	4
Carex utriculata	2	Persicaria amphibia	2
Phalaris arundinacea	4	Typha latifolia	0

Ending Station 584 Community Type: Carex spp. / Persicaria amphibia

Species	Cover class	Species	Cover class
Carex aquatilis	3	Carex lasiocarpa	3
Carex utriculata	3	Open Water	3
Persicaria amphibia	3	Phalaris arundinacea	1

Transect Notes:

Phalaris arundinacea was slightly reduced in cover in 2022. This transect was innundated with 0-2 feet of water in 2022.

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 2020-2022, 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. MDT staff (contacted July 2017) indicated that some of the woody plantings along the Schrieber Creek corridor were likely adversely affected by weed spraying activities at the site.

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 2022.

Species	#Observed	Behavior	Habitat
Brewer's Blackbird	12		
Canada Goose	10		
Eastern Kingbird	2		
Great Blue Heron	1		
Killdeer	5		
Mallard	4		
Marsh Wren	1		
Osprey	2		
Red-winged Blackbird	15		
Rock Wren	2		
Ruddy Duck	6		
Wilson's Snipe	2		

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	4	No	No	No	Many frogs were heard but not observed
Mountain Lion	1	Yes	No	No	
Raccoon	2	Yes	No	No	
Richardson's Ground Squirrel	5	No	No	No	
White-tailed Deer	4	No	No	No	

Wildlife Comments:

A diversity of bird and wildlife species utilize the site.

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	48.107415	-115.410029		
DP01-w	48.10633	-115.409342		
DP02-u	48.103407	-115.406738		
DP02-w	48.102323	-115.410111		
DP03-u	48.105426	-115.409653		
DP03-w	48.105361	-115.409498		
DP04b-w	48.105876	-115.409417		
DP04-u	48.105794	-115.409391		
DP04-w	48.104214	-115.413387		
DP05-u	48.106495	-115.412299		
DP05-w	48.106436	-115.412202		
DP06-u	48.105844	-115.413923		
DP06-w	48.105707	-115.413779		
DP07-u	48.104299	-115.41465		
DP07-w	48.104318	-115.414524		
DP08-u	48.107346	-115.410028		
DP08-w	48.106294	-115.409446		
DP09-u	48.103346	-115.406682		
DP09-w	48.102388	-115.410077		
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 2022 was 55.53 acres, a decrease of 0.05 acres since 2021 (Table 2; see maps in Appendix A). Schrieber Lake occupied 8.00 acres and remaining 'open water' areas represented a total of 4.20 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 and appears to be actively maintained. The beaver dam is still impounding water throughout the lower elevations of the site 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 | City/County: Lincoln | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP01-u

Investigator(s): W Fouts | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.107346 | Long: -115.410028 | Datum: NAD 83

Soil Map Unit Name: 108: Andic dystric eutrocrepts, lacustrine terraces-andic dystrocrepts, gla | 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 northeast corner of project area.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status
Picea engelmannii	10	☑	FAC
Pinus contorta	1	☐	FAC
Pseudotsuga menziesii	4	☑	FACU

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Arctostaphylos uva-ursi	3	☑	FACU
Pseudotsuga menziesii	2	☑	FACU

Herbaceous Stratum Plot size (5 Foot Radius)

Agrostis capillaris	4	☐	FAC
Alopecurus pratensis	1	☐	FAC
Elymus repens	15	☑	FAC
Elymus trachycaulus	10	☑	FAC
Poa pratensis	6	☐	FAC

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 61

Dominance Test worksheet

Number of Dominant Species that are OBL, FACW or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	0	X 2	0
FAC species	47	X 3	141
FACU species	9	X 4	36
UPL species	0	X 5	0
Column Totals	56 (A)		177 (B)

Prevalence Index = B/A = 3.16071

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
Most of the bare ground at this point is covered in litter. This data point hosts an upland plant community.

SOIL

Sampling Point: DP01-u

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
	2/1	90	N 2.5/0	10			Loam	**Charcoal, burned wood**
08-16	10YR 4/1	100					Sandy Loam	**Bottom of pit**

[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:

The second horizon meets requirements for the Redox Dark Surface indicator, but the dark color is likely due to the presence of burned wood and charcoal in the 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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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 Sampling Date: 7/12/2022

Applicant/Owner: MDT State: Montana Sampling Point: DP01-w

Investigator(s): S Weyant, W Fouts Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E Lat: 48.107415 Long: -115.410029 Datum: NAD 83

Soil Map Unit Name: 108-Andic dystric eutrocrepts, lacustrine terraces-andic Dystrocrepts, gla NWI classification: PEM

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 approximately 3 feet in elevation lower than DP01-u.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	5	☐	FAC
Cirsium arvense	1	☐	FAC
Lemna minor	5	☐	OBL
Phalaris arundinacea	45	☑	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 44

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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	5	X 1	5
FACW species	45	X 2	90
FAC species	6	X 3	18
FACU species	0	X 4	0
UPL species	0	X 5	0
Column Totals	56 (A)		113 (B)

Prevalence Index = B/A = 2.01786

Hydrophytic Vegetation Indicators

- ☑ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A prevalence index below three and a poisitive dominance test indicate the presence of a hydrophytic vegetation community.

SOIL

Sampling Point: DP01-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
0-03							Organic	**2 inches of litter at the surface**
03-12	10YR 2/2	100					Peat (Fibric)	**High OM content**
12-15	10YR 2/2	100					Sand	**Bottom of pit**

[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 sulfidic odor present in all horizons provides evidence of hydric soils. In the lowest horizon, the sand matrix is made up of almost gravelly particles roughly two millimeters in size.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 5

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 saturation to the soil surface, a water table depth 5 inches from the soil surface, and sulfidic odor in all soil horizons.

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

Project/Site: Schrieber Lake City/County: Lincoln Sampling Date: 7/12/2022

Applicant/Owner: MDT State: Montana Sampling Point: DP02-u

Investigator(s): S Weyant Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E Lat: 48.10633 Long: -115.409342 Datum: NAD 83

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 point located approximately 2 feet higher than DP02-w.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status
Pinus contorta	2	☑	FAC
Pinus ponderosa	1	☑	FACU

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Agrostis stolonifera	5	☐	FAC
Alopecurus pratensis	3	☐	FAC
Bromus inermis	5	☐	UPL
Elymus glaucus	20	☑	FACU
Phleum pratense	10	☐	FAC
Poa pratensis	45	☑	FAC
Verbascum thapsus	1	☐	FACU

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 11

Dominance Test worksheet

Number of Dominant Species that are OBL, FACW or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	0	X 2	0
FAC species	65	X 3	195
FACU species	22	X 4	88
UPL species	5	X 5	25
Column Totals	92 (A)		308 (B)

Prevalence Index = B/A = 3.34783

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
This data point is dominated by upland vegetation.

SOIL

Sampling Point: DP02-u

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
0-16	10YR 3/2	100					Sandy Loam	**Bottom of pit, Fine roots**

[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. 1" of litter located above the soil surface.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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. The soil profile was dry throughout the profile.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP02-w

Investigator(s): W Fouts | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.106294 | Long: -115.409446 | Datum: NAD 83

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 on the east side of wetland cell 9.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Agrostis stolonifera	2	☐	FAC
Alopecurus pratensis	4	☐	FAC
Phalaris arundinacea	87	☑	FACW
Phleum pratense	2	☐	FAC

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 5

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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	87	X 2	174
FAC species	8	X 3	24
FACU species	0	X 4	0
UPL species	0	X 5	0
Column Totals	95 (A)		198 (B)

Prevalence Index = B/A = 2.08421

Hydrophytic Vegetation Indicators

- ☑ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A prevalence index below three indicates the presence of a hydrophytic plant community at this data point.

SOIL

Sampling Point: DP02-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
01-03	10YR 2/1	100					Loam	
03-08	10YR 8/2	95	10YR 8/8	5	C	PL	Silt Loam	
08-16	10YR 2/1	100					Loam	**Bottom of pit**

[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 along pore linings within the depleted matrix.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 5

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 the point's geomorphic position, a positive FAC-neutral test, and saturation within 5" of the soil surface.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP03-u

Investigator(s): W Fouts | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.103346 | Long: -115.406682 | Datum: NAD 83

Soil Map Unit Name: 108: Andic dystric eutrocrepts, lacustrine terraces-Andic dystrocrepts, gl | 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:
This sample point is located in the southeast corner of the project area, near Schrieber Lake.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status
Picea engelmannii	20	☑	FAC
Pseudotsuga menziesii	5	☑	FACU

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Amelanchier alnifolia	2	☐	FACU
Pseudotsuga menziesii	5	☑	FACU
Rosa woodsii	2	☐	FACU
Symphoricarpos albus	10	☑	FACU

Herbaceous Stratum Plot size (5 Foot Radius)

Achillea millefolium	1	☐	FACU
Alopecurus arundinaceus	5	☐	FAC
Alopecurus pratensis	15	☑	FAC
Centaurea stoebe	3	☐	UPL
Cirsium arvense	1	☐	FAC
Elymus repens	50	☑	FAC
Fragaria virginiana	1	☐	FACU
Penstemon confertus	1	☐	UPL

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 18

Dominance Test worksheet

Number of Dominant Species that are OBL, FACW or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	0	X 2	0
FAC species	91	X 3	273
FACU species	26	X 4	104
UPL species	4	X 5	20
Column Totals	121 (A)		397 (B)

Prevalence Index = B/A = 3.28099

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
The vegetation community at this data point is dominated by upland species.

SOIL

Sampling Point: DP03-u

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
		100					Loam	
07-11	10YR 3/4	100					Loam	
11-16	10YR 3/2	100					Loam	**Bottom of pit**

[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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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 | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP03-w

Investigator(s): S Weyant | Section, Township, Range: S 13 T 27N R 30W

Landform (hillslope, terrace, etc.): Toeslope/bank | Local relief (concave, convex, none): flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 48.103407 | Long: -115.406738 | Datum: NAD 83

Soil Map Unit Name: 108: Andic Dystric Eutrocrepts, lacustrine terraces-Andic Dystrocrepts, g | NWI classification: PEM

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 approximately 0.75 feet above the lake surface.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	60	☑	FAC
Cirsium arvense	25	☑	FAC
Phalaris arundinacea	15	☐	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 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	0	X 1	0
FACW species	15	X 2	30
FAC species	85	X 3	255
FACU species	0	X 4	0
UPL species	0	X 5	0
Column Totals	100 (A)		285 (B)

Prevalence Index = B/A = 2.85

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A hydrophytic vegetation community is indicated by a prevalence index below three and a positive dominance test.

SOIL

Sampling Point: DP03-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
0-17	10YR 2/2	93	10YR 4/6	7	C	PL	Fibric	
17-22	10YR 3/1	80	10YR 4/6	20	C	M	Silt Loam	**Bottom of pit**

[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 sulfidic odor, and presence of a histolsol indicates the presence of hydric 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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 11

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 observed in a positive FAC-neutral test, sulfidic odor beginning at 10" from the soil surface, a water table depth of 11" from the soil surface, and saturation at the soil surface.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/12/2022

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

Investigator(s): S Weyant | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.104214 | Long: -115.413387 | Datum: NAD 83

Soil Map Unit Name: 105: Aquic udifluvents, poorly drained | NWI classification: PEM

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 near the end of vegetation transect 3.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Betula pumila	27	☑	OBL
Salix lasiandra	5	☐	FACW

Herbaceous Stratum Plot size (5 Foot Radius)

Carex vesicaria	50	☑	OBL
Persicaria amphibia	10	☐	OBL
Potentilla anserina	10	☐	OBL

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 30

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	97	X 1	97
FACW species	5	X 2	10
FAC species	0	X 3	0
FACU species	0	X 4	0
UPL species	0	X 5	0
Column Totals	102 (A)		107 (B)

Prevalence Index = B/A = 1.04902

Hydrophytic Vegetation Indicators

- ☑ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
Much of the shrub cover at this point is made up of dead stems, although there is a small amount of regrowth and new leaves in the interior. A prevalence index below three and a positive dominance test indicate the presence of a wetland plant community at this site.

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 24 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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 24

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, 25 inches of water above the surface, as well as the site's geomorphic position and a positive FAC-neutral test.

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

Project/Site: Schrieber Lake City/County: Lincoln Sampling Date: 7/12/2022

Applicant/Owner: MDT State: Montana Sampling Point: DP04-u

Investigator(s): S Weyant Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E Lat: 48.102323 Long: -115.410111 Datum: NAD 83

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:
This point is located between 0.5' and .75' above DP04-w.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)	Absolute % Cover:	Domiant Species?	Indicator Status
Abies grandis	10	☑	FACU
Picea engelmannii	23	☑	FAC
Pinus ponderosa	2	☐	FACU

Sapling/Shrub Stratum Plot size (15 Foot Radius)			
Abies grandis	10	☑	FACU
Alnus incana	10	☑	FACW
Picea engelmannii	5	☐	FAC
Symphoricarpos albus	5	☐	FACU

Herbaceous Stratum Plot size (5 Foot Radius)			
Achillea millefolium	1	☐	FACU
Alopecurus arundinaceus	1	☐	FAC
Bromus inermis	8	☐	UPL
Campanula rotundifolia	2	☐	FACU
Equisetum arvense	8	☐	FAC
Festuca rubra	32	☑	FAC
Hieracium aurantiacum	3	☐	UPL
Linaria dalmatica	45	☑	UPL

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 0

Dominance Test worksheet

Number of Dominant Species that are OBL, FACW or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	10	X 2	20
FAC species	69	X 3	207
FACU species	30	X 4	120
UPL species	56	X 5	280
Column Totals	165 (A)		627 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
The vegetation community at this point is dominated by upland species.

SOIL

Sampling Point: DP04-u

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
0-08	10YR 4/1	100					Silt Loam	
08-16	2.5Y 7/1	100					Potential Loam	**Bottom of pit**

[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:

The soil in the lower horizon may be an ash layer. It is extremely smooth and has a texture similar to that of cornstarch, and will ribbon but folds immediately. Color requirements for a depleted matrix are met in the same horizon but the soil color is not believed to be the result of a depleted matrix.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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:

Soil in the observation pit was noted to be moist below 8 inches, but no wetland hydrology indicators were observed.

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

Project/Site: Schrieber Lake City/County: Lincoln Sampling Date: 7/12/2022

Applicant/Owner: MDT State: Montana Sampling Point: DP04-w

Investigator(s): W Fouts Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E Lat: 48.102388 Long: -115.410077 Datum: NAD 83

Soil Map Unit Name: 105: Aquic udifluvents, poorly drained NWI classification: PEM

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 southeast section of the project area

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Persicaria amphibia	97	☑	OBL
Phalaris arundinacea	3	☐	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	97	X 1	97
FACW species	3	X 2	6
FAC species	0	X 3	0
FACU species	0	X 4	0
UPL species	0	X 5	0
Column Totals	100 (A)		103 (B)

Prevalence Index = B/A = 1.03

Hydrophytic Vegetation Indicators

- ☑ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A prevalence index below three indicates the presence of a hydrophytic plant community at this data point.

SOIL

Sampling Point: DP04-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
0-04	10YR 3/2	100					Silt Loam	**Many roots**
04-16	2.5Y 6/2	100					Loam	**Possible ash, bottom of pit**

[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:

Soil in the second horizon is a possible ash layer, and has a texture similar to cornstarch.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 11

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): 9

Wetland Hydrology Present? Yes ☑ No ☐

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

Remarks:

Evidence of wetland hydrology at this point is found in a water table within 11" of the soil surface and saturation within 9" of the soil surface, as well as a positive FAC-neutral test and the point's geomorphic position.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP05-u

Investigator(s): J Trilling | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.106495 | Long: -115.412299 | Datum: NAD 83

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 outside wetland cell 6.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Berberis repens	3	☑	UPL
Symphoricarpos albus	10	☑	FACU

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	25	☑	FAC
Alyssum alyssoides	1	☐	UPL
Pascopyrum smithii	15	☐	FACU
Phleum pratense	35	☑	FAC
Stipa viridula	15	☐	UPL

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 9

Dominance Test worksheet

Number of Dominant Species that are OBL, FACW or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	0	X 2	0
FAC species	60	X 3	180
FACU species	25	X 4	100
UPL species	19	X 5	95
Column Totals	104 (A)		375 (B)

Prevalence Index = B/A = 3.60577

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
The vegetation community at this point is dominated by upland species.

SOIL

Sampling Point: DP05-u

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
0-05	10YR 2/2	100					Sandy Loam	**Fine roots**
05-15	10YR 3/1	100					Sandy Loam	**Bottom of pit**

[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. Common pebbles cobbles observed in lower soil horizon.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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 | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP05-w

Investigator(s): J Trilling | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.106436 | Long: -115.412202 | Datum: NAD 83

Soil Map Unit Name: 105: Aquic udifluvents, poorly drained | NWI classification: PEM

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 near center of project area.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Carex utriculata	30	☑	OBL
Phalaris arundinacea	60	☑	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 10

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	30	X 1	30
FACW species	60	X 2	120
FAC species	0	X 3	0
FACU species	0	X 4	0
UPL species	0	X 5	0
Column Totals	90 (A)		150 (B)

Prevalence Index = B/A = 1.66667

Hydrophytic Vegetation Indicators

- ☑ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A prevalence index below three and a positive dominance test indicate the presence of a hydrophytic plant community at this data point.

SOIL

Sampling Point: DP05-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
0-06	10YR 2/1	100					Silt Loam-fibrous	
06-16	10YR 2/1	100					Loam-fibrous	**Bottom of pit**

[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:

Evidence of hydric soils indicated by a sulfidic odor.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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:

This point's geomorphic position, saturation to the soil surface, a depth to the water table of three inches, and a hydrogen sulfide odor inidcate wetland hydrology.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP06-u

Investigator(s): J Trilling | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.105844 | Long: -115.413923 | Datum: NAD 83

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 the east side of the project area, near the start of vegetation transect 3.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	25	☑	FAC
Bromus inermis	65	☑	UPL
Phalaris arundinacea	5	☐	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 5

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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	5	X 2	10
FAC species	25	X 3	75
FACU species	0	X 4	0
UPL species	65	X 5	325
Column Totals	95 (A)		410 (B)

Prevalence Index = B/A = 4.31579

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
The vegetation community at this data point is dominated by upland species.

SOIL

Sampling Point: DP06-u

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
	2/2	100					Clay Loam	
10-16	10YR 8/1	98	10YR 4/6	2	C	M	Sandy Clay Loam	**Bottom of pit**

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☐

Remarks:

Prominent redoximorphic concentrations common in the lower horizon.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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 Sampling Date: 7/12/2022

Applicant/Owner: MDT State: Montana Sampling Point: DP06-w

Investigator(s): J Trilling Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E Lat: 48.105707 Long: -115.413779 Datum: NAD 83

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:
Sample point located near the start of vegetation transect 3, in wetland cell 4.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	4	☐	FAC
Bromus inermis	1	☐	UPL
Phalaris arundinacea	95	☑	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	95	X 2	190
FAC species	4	X 3	12
FACU species	0	X 4	0
UPL species	1	X 5	5
Column Totals	100 (A)		207 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators

- ☑ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A prevalence index below three and a positive dominance test indicate that a hydrophytic vegetation community is present at this data point.

SOIL

Sampling Point: DP06-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
								Fibrous
							Silt Loam	**Bottom of pit**
18-20	10YR 5/1	98	10YR 5/6	2	C	M	Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☐

Remarks:

Distinct redoximorphic concentrations common within the lower two soil layers.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 7

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 saturation within 7" of the soil surface.

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

Project/Site: Schrieber Lake City/County: Lincoln Sampling Date: 7/12/2022

Applicant/Owner: MDT State: Montana Sampling Point: DP07-u

Investigator(s): J Trilling Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E Lat: 48.104299 Long: -115.41465 Datum: NAD 83

Soil Map Unit Name: 108: Andic dystric eutrocrepts, lacustrine terraces-Andic dystrocrepts, gl NWI classification: Not mapped

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

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

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

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
Upland sample point located in the southwest corner of the project area.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)	Absolute % Cover:	Domiant Species?	Indicator Status
Abies grandis	30	☑	FACU
Larix occidentalis	10	☐	FACU
Pinus contorta	20	☑	FAC

Sapling/Shrub Stratum Plot size (15 Foot Radius)			
Amelanchier alnifolia	15	☑	FACU
Rosa woodsii	10	☑	FACU
Symphoricarpos albus	20	☑	FACU

Herbaceous Stratum Plot size (5 Foot Radius)			
Arctostaphylos uva-ursi	20	☑	FACU
Berberis repens	10	☐	UPL
Calamagrostis rubescens	15	☑	UPL
Campanula rotundifolia	2	☐	FACU
Equisetum arvense	5	☐	FAC
Fragaria virginiana	10	☐	FACU
Hieracium aurantiacum	3	☐	UPL
Hieracium scouleri	20	☑	UPL
Linnaea borealis	2	☐	FACU
Penstemon confertus	2	☐	UPL

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 11

Dominance Test worksheet

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5 % (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	119	X 4	476
UPL species	50	X 5	250
Column Totals	194 (A)		801 (B)

Prevalence Index = B/A = 4.12887

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
This data point is dominated by upland vegetation species.

SOIL

Sampling Point: DP07-u

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
02-10	10YR 4/1	100					Sandy Loam	
10+							Cobbles	**Rock refusal**

[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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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 | Sampling Date: 7/12/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP07-w

Investigator(s): J Trilling | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.104318 | Long: -115.414524 | Datum: NAD 83

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:
Sample point located along the south side of wetland cell 1.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	10	☐	FAC
Bromus inermis	5	☐	UPL
Cirsium arvense	2	☐	FAC
Elymus repens	5	☐	FAC
Phalaris arundinacea	80	☑	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	80	X 2	160
FAC species	17	X 3	51
FACU species	0	X 4	0
UPL species	5	X 5	25
Column Totals	102 (A)		236 (B)

Prevalence Index = B/A = 2.31373

Hydrophytic Vegetation Indicators

- ☑ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A prevalence index below three indicate a hydrophytic vegetation community.

SOIL

Sampling Point: DP07-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
	2/1	100					Clay Loam	
06-16	2.5YR 5/2	95	2.5YR 5/8	5	C	M	Sandy Loam	**Bottom of pit**

[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:

Distinct redoximorphic concentrations present within the depleted matrix.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 6

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 saturation within 6" of the soil surface.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/13/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP08-u

Investigator(s): S Weyant | Section, Township, Range: S 13 T 27N R 30W

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

Subregion (LRR): LRR E | Lat: 48.105426 | Long: -115.409653 | Datum: NAD 83

Soil Map Unit Name: 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:
This point is located approximately 1.5 feet in elevation above DP08-w.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus arundinaceus	5	☐	FAC
Bromus carinatus	2	☐	UPL
Bromus tectorum	5	☐	UPL
Centaurea stoebe	50	☑	UPL
Penstemon confertus	3	☐	UPL
Phleum pratense	7	☐	FAC
Rumex acetosa	1	☐	FAC
Verbascum thapsus	1	☐	FACU

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 26

Dominance Test worksheet

Number of Dominant Species that are OBL, FACW or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	0	X 2	0
FAC species	13	X 3	39
FACU species	1	X 4	4
UPL species	60	X 5	300
Column Totals	74 (A)		343 (B)

Prevalence Index = B/A = 4.63514

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
The vegetation community at this data point is dominated by upland vegetation.

SOIL

Sampling Point: DP08-u

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
0-04	10YR 2/1	100					Sandy Loam	**Fine roots.**
04-16	2.5Y 3/1	100					Loamy Sand	**Bottom of pit**

[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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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 wetland hydrology indicators observed here. Soil in the test pit was dry throughout the profile.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/13/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP08-w

Investigator(s): S Weyant | Section, Township, Range: S 13 T 27N R 30W

Landform (hillslope, terrace, etc.): Toeslope/bank | Local relief (concave, convex, none): flat | Slope (%): 5

Subregion (LRR): LRR E | Lat: 48.105361 | Long: -115.409498 | Datum: NAD 83

Soil Map Unit Name: 105: Aquic udifluvents, poorly drained | NWI classification: PEM

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 and its matching upland point are located on the island between wetland cell 7 and Schrieber lake.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius) — Absolute % Cover: | Domiant Species? | Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	40	☑	FAC
Carex aquatilis	5	☐	OBL
Carex lasiocarpa	30	☑	OBL
Epilobium ciliatum	3	☐	FACW
Persicaria amphibia	10	☐	OBL
Phalaris arundinacea	5	☐	FACW

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	45	X 1	45
FACW species	8	X 2	16
FAC species	40	X 3	120
FACU species	0	X 4	0
UPL species	0	X 5	0
Column Totals	93 (A)		181 (B)

Prevalence Index = B/A = 1.94624

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

Remarks:
A prevalence index below three and a positive dominance test indicate a hydrophytic plant community.

SOIL

Sampling Point: DP08-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
0-06	10YR 2/1	100					Loam	
06-16+	10YR 2/1	100					Sand	**Gravels, cobbles, bottom of pit**

[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 provides evidence of hydric soils. The upper horizon has a very high root content and is developing into a fibric, low-mineral content 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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 7

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 observed in saturation to the soil surface, and a high water table 7 inches from the soil surface, as well as sulfidic odor, a positive FAC-neutral test, and the point's geomorphic position.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/13/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP09-u

Investigator(s): S Weyant | Section, Township, Range: S 13 T 27N R 30W

Landform (hillslope, terrace, etc.): Flat/Island | Local relief (concave, convex, none): flat | Slope (%): 0

Subregion (LRR): LRR E | Lat: 48.105876 | Long: -115.409417 | Datum: NAD 83

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:
This point is located approximately 0.75' above DP09-w.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius) — Absolute % Cover: | Domiant Species? | Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Achillea millefolium	1	☐	FACU
Berteroa incana	1	☐	UPL
Centaurea stoebe	40	☑	UPL
Fragaria virginiana	1	☐	FACU
Phleum pratense	30	☑	FAC
Rumex acetosa	2	☐	FAC
Verbascum thapsus	5	☐	FACU

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 20

Dominance Test worksheet

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	0	X 1	0
FACW species	0	X 2	0
FAC species	32	X 3	96
FACU species	7	X 4	28
UPL species	41	X 5	205
Column Totals	80 (A)		329 (B)

Prevalence Index = B/A = 4.1125

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☐ NO ☑

Remarks:
This data point hosts an upland plant community.

SOIL

Sampling Point: DP09-u

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
0-05	10YR 2/2	100					Loam	
06-16	2.5Y 5/2	100					Loamy Sand	**Bottom of pit**

[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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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:

Although some moisture was observed due to precipitation the previous night, soils within the test pit were dry and not hydric soil indicators were observed.

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

Project/Site: Schrieber Lake | City/County: Lincoln | Sampling Date: 7/13/2022

Applicant/Owner: MDT | State: Montana | Sampling Point: DP09-w

Investigator(s): S Weyant | Section, Township, Range: S 13 T 27N R 30W

Landform (hillslope, terrace, etc.): Toeslope/Undulating Valley b | Local relief (concave, convex, none): concave | Slope (%): 0

Subregion (LRR): LRR E | Lat: 48.105794 | Long: -115.409391 | Datum: NAD 83

Soil Map Unit Name: Aquic udifluvents, poorly drained | NWI classification: PEM

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 to the west of wetland cell 10.

VEGETATION - Use scientific names of plants

Tree Stratum Plot size (30 Foot Radius)

	Absolute % Cover:	Domiant Species?	Indicator Status

Sapling/Shrub Stratum Plot size (15 Foot Radius)

Herbaceous Stratum Plot size (5 Foot Radius)

Alopecurus pratensis	79	☑	FAC
Cirsium arvense	5	☐	FAC
Epilobium ciliatum	5	☐	FACW
Persicaria amphibia	2	☐	OBL
Phalaris arundinacea	8	☐	FACW
Verbascum thapsus	1	☐	FACU

Woody Vine Stratum Plot size (30 Foot Radius)

Percent Bare Ground 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 % (A/B)

Prevalence Index worksheet

Total % Cover of:			Multiply by:
OBL species	2	X 1	2
FACW species	13	X 2	26
FAC species	84	X 3	252
FACU species	1	X 4	4
UPL species	0	X 5	0
Column Totals	100 (A)		284 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is <= 3.0
- ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
- ☐ 5 - Wetland Non-Vascular Plants
- ☐ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Hydrophytic Vegetation Present? Yes ☑ NO ☐

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

SOIL

Sampling Point: DP09-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
0-01	10YR 2/2	100					Organic/mineral	**Dense roots**
01-09	10YR 2/1	100					Gritty-Fibric	
09-17	10YR 2/1	100					Gritty-Hemic	**Bottom of pit**

[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 and loamy mucky mineral indicates the presence of hydric 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 Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres 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): 13

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 observed in saturation to the soil surface, a positive FAC-neutral test, sulfidic odor within the soil profile, and the point's geomorphic position. A depth to the water table of 13" was also observed.

MDT Montana Wetland Assessment Form (revised March 2008)

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

3. Evaluation Date 7/12/2022 **4. Evaluators** J Trilling, W Fouts, S Weyant, K Lauver **5. Wetland/Site# (s)** Schrieber Lake

6. Wetland Location(s): **T** 27N **R** 30W **Sec1** 13 **T** **R** **Sec2**

Approx Stationing or Mileposts Approximately Milepost 53.8

Watershed 1 - Kootenai **Watershed/County** Lincoln

7. Evaluating Agency CCI for MDT

8. Wetland size acres 55.91

Purpose of Evaluation

How assessed: Measured e.g. by GPS

☐ **Wetlands potentially affected by MDT project**

9. Assesssment area (AA) size (acres) 55.91

☐ **Mitigation Wetlands: pre-construction**

How assessed: Measured e.g. by GPS

☑ **Mitigation Wetlands: post construction**

☐ **Other**

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Depressional	Aquatic Bed		Permanent/Perennial	25
Depressional	Emergent Wetland		Permanent/Perennial	10
Riverine	Unconsolidated Bottom		Permanent/Perennial	5
Slope	Emergent Wetland		Permanent/Perennial	30
Slope	Emergent Wetland		Seasonal/Intermittent	10
Slope	Scrub-Shrub Wetland		Permanent/Perennial	20

11. Estimated Relative Abundance 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**) lists)

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 <=30%.	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 species:

Spotted knapweed, Canada thistle, orange hawkweed, field bindweed, and Linaria vulgaris

iii. Provide brief descriptive summary of AA and surrounding land use/habitat

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 entire AA has permanent/perennial water regime, and dominated by hydrophytic vegetation. PSS wetlands occur along pre-existing creek channels and in southwest corner of the site where a "carr" fen occurs. The fen supports bog birch and has been reported in previous years to support hoary willow.

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

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 (check one based on definitions contained in instructions):

Primary or critical habitat (list species)	◉ D ◉ S	
Secondary habitat (list Species)	◉ D ○ S	Grizzly bear
Incidental habitat (list species)	○ D ◉ S	Canada lynx, North American wolverine, Yellow-billed Cuckoo, Spaldings ca
No usable habitat	▣ S	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] 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	.8H	.7M	.3L	.1L	0L

Sources for documented use 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 (check one based on definitions contained in instructions):

Primary or critical habitat (list species)	◉ D ○ S	Salix candida (S3/S4),Western toad (S2);
Secondary habitat (list Species)	◉ D ○ S	Townsend's big-eared bat (S3), hoary bat (S3)
Incidental habitat (list species)	○ D ◉ S	Westslope cuthroat trout (S2), fisher (S3)
No usable habitat	▣ S	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] 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 MDT BRR. USFS, MTNHP and MFWP databases and discussions with reg wildlife and fisheries biologists. Western toads observed by MDT and Kootenai Nat'l Forest personel in April 2011.

14C. General Wildlife Habitat Rating:

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

Substantial

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, check 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 in terms 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 [check] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Low
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 check ☐ **NA** here and proceed to 14E.) Cold Water

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check 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	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1)
a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity ***or*** *is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support,* ***or*** *do aquatic nuisance plant or animal species (see* ***Appendix E****) occur in fish habitat?* **Y** ◯ **N** ◉ *If yes, reduce score in* ***i*** *above by 0.1:* **Modified Rating** .7M

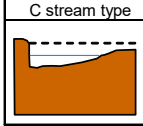
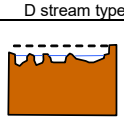
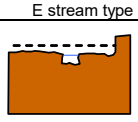
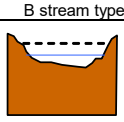
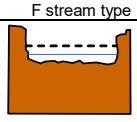
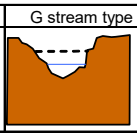
b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ◯ **Y** ◉ **N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*
Modifed Rating .7M

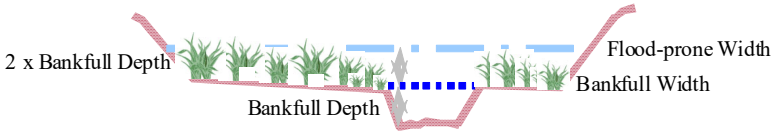
iii. Final Score and Rating: .7 M **Comments:** Brook Trout documented in Schrieber Creek immediately up and downstream of Schrieber Lake by FWP in 2011 (MFISH query). Westslope Cutthroat documented upstream, outside project area.

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, click ☐ **NA** here and proceed to 14F.)

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

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

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
						



Floodprone width 25 / **Bankfull width** 10 = **Entrenchment ratio** 2.5

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 (check)? **Y** ◯ **N** ◉

Comments: Stream channels in AA have free access to most of their floodplains. Floodplains 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, click ☐ **NA** here and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [check] 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 great than 5 ac-feet, observed in 2022 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, click ☐ **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] 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, click ☐ **NA** here and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] 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	
35-64%			
< 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 [check])

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 [check] 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	1E	.7H	.8H	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.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? **Y** ◉ **N** ○ *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* **Modified Rating** 1 E

Comments: High level of biological activity, veg component > 5 ac, perennial, has surface and subsurface outlets

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

i. Discharge Indicators

- [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
- [ ] Seeps are present at the wetland edge
- [ ] AA permanently flooded during drought periods
- [ ] Wetland contains an outlet, but no inlet
- [ ] 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 [check] 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		NA		

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 [check] 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	.7H	.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: (check) **Y** (●) **N** (○) (if 'Yes' continue with the evaluation; if 'No' then click ☐ **NA** here and proceed to the overall summary and rating page)

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

iii. Rating (use the matrix below to arrive at [check] the functional points and 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

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 Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	H	.8	1	44.73	☐
B. MT Natural Heritage Program Species Habitat	H	.9	1	50.32	☐
C. General Wildlife Habitat	E	1	1	55.91	☑
D. General Fish Habitat	M	.7	1	39.14	☐
E. Flood Attenuation	M	.6	1	33.55	☐
F. Short and Long Term Surface Water Storage	H	1	1	55.91	☑
G. Sediment/Nutrient/Toxicant Removal	H	1	1	55.91	☐
H. Sediment/Shoreline Stabilization	H	1	1	55.91	☐
I. Production Export/Food Chain Support	E	1	1	55.91	☑
J. Groundwater Discharge/Recharge	H	1	1	55.91	☐
K. Uniqueness	H	1	1	55.91	☑
L. Recreation/Education Potential (bonus points)	H	.2	NA	11.18	☐
Totals:		10.2	11		
Percent of Possible Score			**92.73** %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
- ☐ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
- ☑ Score of 1 functional point for Uniqueness; **or**
- ☐ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
- ☑ 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**
- ☐ 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**
- ☐ 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:
(check appropriate category based on the criteria outlined above)

I	II	III	IV

Table B-1. Schrieber Lake Wetland Mitigation Site. Comprehensive vegetation species list 2015-2022

Scientific Name	**Common Name**	**WMVC Indicator Status[1]**
Abies bifolia	Herb	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**	**NL**
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**	**NL**
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
Centaurea stoebe	Spotted Knapweed	UPL
Cirsium arvense	Canadian Thistle	FAC
Cirsium vulgare	Bull thistle	FACU

Scientific Name	**Common Name**	**WMVC Indicator Status(1)**
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**	**NL**
Hieracium scouleri	**Scouler's Woollyweed**	**NL**
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
Pascopyrum smithii	Western-Wheat Grass	FACU

Scientific Name	**Common Name**	**WMVC Indicator Status[1]**
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
Urtica dioica	Stinging Nettle	FAC

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

[1] 2020 NWPL (USACE 2020)

New species identified in 2022 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: 2022



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: 2022



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: 2022

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: 2022



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: 2022



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: 2022

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: 2022



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: 2022



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



Photo Point: 3 Location: West of Corrals
Bearing: 183 degrees Year: 2022

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: 2022



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



Photo Point: 5 – Photo 1 Location: Corner of carr
Bearing: 143 degrees Year: 2022



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



Photo Point: 5 – Photo 2 Location: Corner of carr
Bearing: 35 degrees Year: 2022

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: 2022



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: 2022



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: 2022

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: 2022



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: 2022



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: 2022

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: 2022



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: 2022



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: 2022

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: 2022



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: 2022



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: 2022

Schrieber Lake: Photo Point Photographs



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



Photo Point: 10 Location: Overlook
Bearing: 39 degrees Year: 2022

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: 2022



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



Transect 1: End Location: T-1
Bearing: 71 degrees Year: 2022



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



Transect 2: Start Location: T-2
Bearing: 152 degrees Year: 2022

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: 2022



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



Transect 3: Start
Bearing: 175 degrees
Location: T-3
Year: 2022



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



Transect 3: End
Bearing: 355 degrees
Location: T-3
Year: 2022

Schrieber Lake: Data Point Photographs



Data Point: DP01w Location: Veg Com 3
Year: 2022



Data Point: DP01u Location: Veg Com 1
Year: 2022



Data Point: DP02w Location: Veg Com 3
Year: 2022



Data Point: DP02u Location: Veg Com 1
Year: 2022



Data Point: DP03w Location: Veg Com 3
Year: 2022



Data Point: DP03u Location: Veg Com 1
Year: 2022

Schrieber Lake: Data Point Photographs



Data Point: DP04b-w Location: Veg Com 2
Year: 2022



Data Point: DP04-w Location: Veg Com 3
Year: 2022



Data Point: DP04u Location: Veg Com 5
Year: 2022



Data Point: DP05w Location: Veg Com 3
Year: 2022



Data Point: DP05u Location: Veg Com 1
Year: 2022

Schrieber Lake: Data Point Photographs



Data Point: DP06w Location: Veg Com 3
Year: 2022



Data Point: DP06u Location: Veg Com 1
Year: 2022



Data Point: DP07w Location: Veg Com 3
Year: 2022



Data Point: DP07u Location: Veg Com 5
Year: 2022



Data Point: DP08w Location: Veg Com 8
Year: 2022



Data Point: DP08u Location: Veg Com 1
Year: 2022

Schrieber Lake: Data Point Photographs



Data Point: DP09w Location: Veg Com 8
Year: 2022



Data Point: DP09u Location: Veg Com 1
Year: 2022

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: 2022



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



Cross-Section: SC1-1 Location: Schrieber Creek
Bearing: 120° – Downstream Year: 2022



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



Cross-Section: SC1-2 Location: Schrieber Creek
Bearing: 280° – upstream Year: 2022

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: 100° – Downstream Year: 2022



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



Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 315° – downstream Year: 2022



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

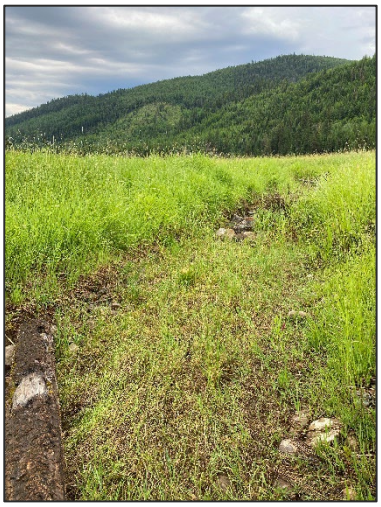


Cross-Section: SC2A-1 Location: Schrieber Creek
Bearing: 135° – Left Bank Year: 2022

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: 2022



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



Cross-Section: SC2A-2 Location: Schrieber Creek
Bearing: 5° –Upstream Year: 2022



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



Cross-Section: SC2B-1 Location: Schrieber Creek
Bearing: 175° – downstream Year: 2022

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: 355° – Upstream Year: 2022



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



Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 240° – Upstream Year: 2022



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



Cross-Section: SC3-1 Location: Schrieber Creek
Bearing: 60° – Downstream Year: 2022

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: 2022



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



Cross-Section: SC3-2 Location: Schrieber Creek
Bearing: 340° –Upstream Year: 2022



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

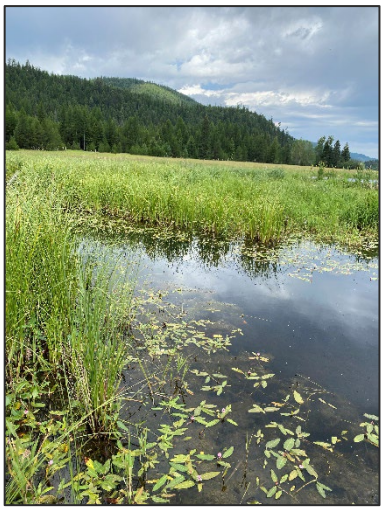


Cross-Section: SC7-1 Location: Schrieber Creek
Bearing: 110° – downstream Year: 2022

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: 270° – Upstream Year: 2022



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



Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 50° – Upstream Year: 2022



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



Cross-Section: CC1A-1 Location: Coyote Creek
Bearing: 230° – Downstream Year: 2022

Schrieber Lake: Cross-Section Photographs



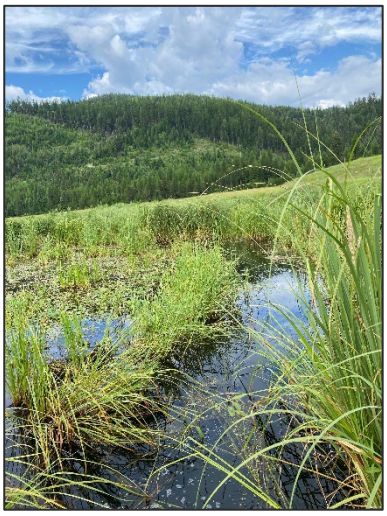
Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 85° – Upstream Year: 2016



Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 85° – Upstream Year: 2022



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



Cross-Section: CC1A-2 Location: Coyote Creek
Bearing: 180° – Downstream Year: 2022



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



Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 200° – Downstream Year: 2022

Schrieber Lake: Cross-Section Photographs



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

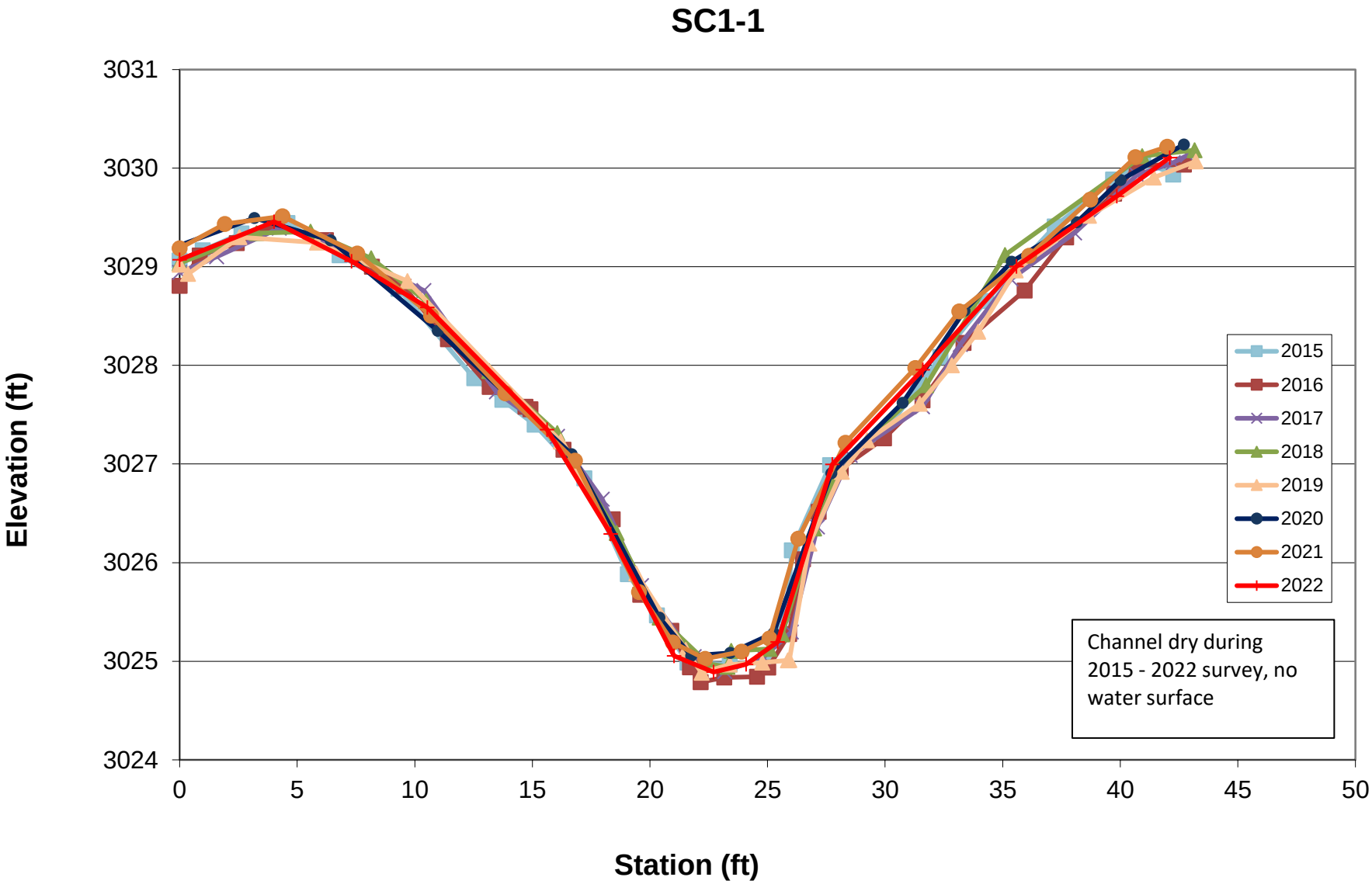


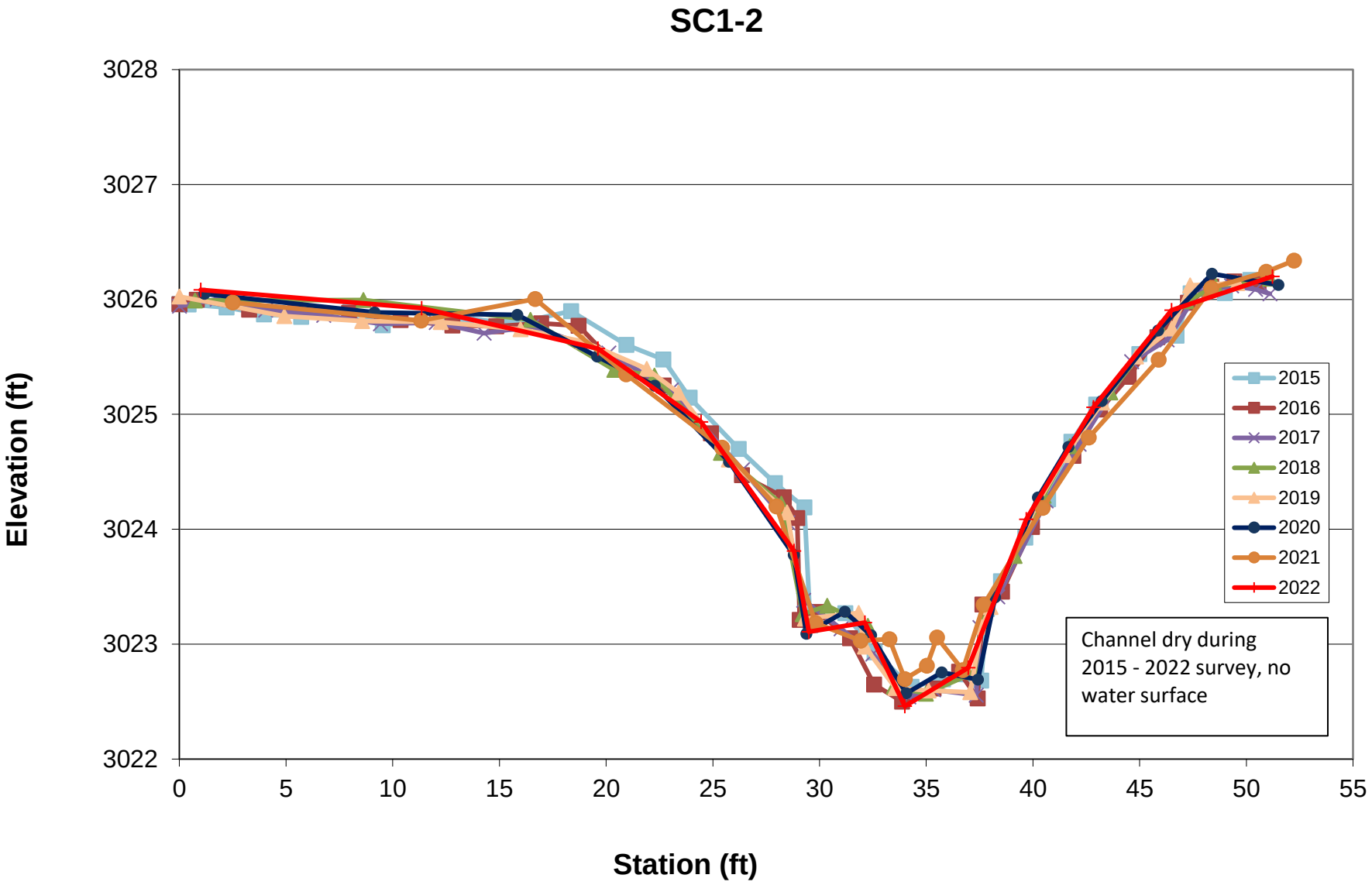
Cross-Section: CC1B-1 Location: Coyote Creek
Bearing: 20° – Upstream Year: 2022

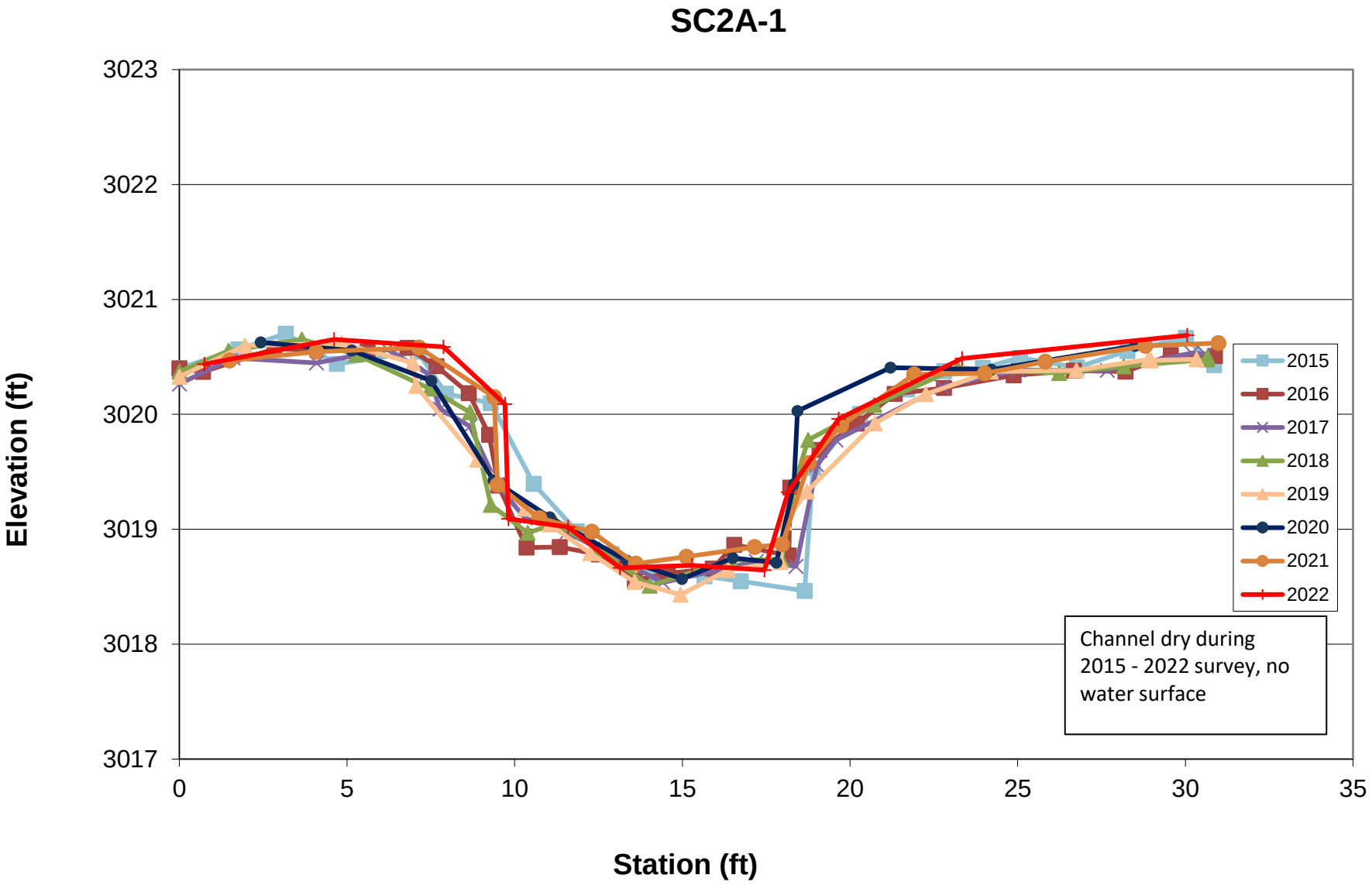
APPENDIX D

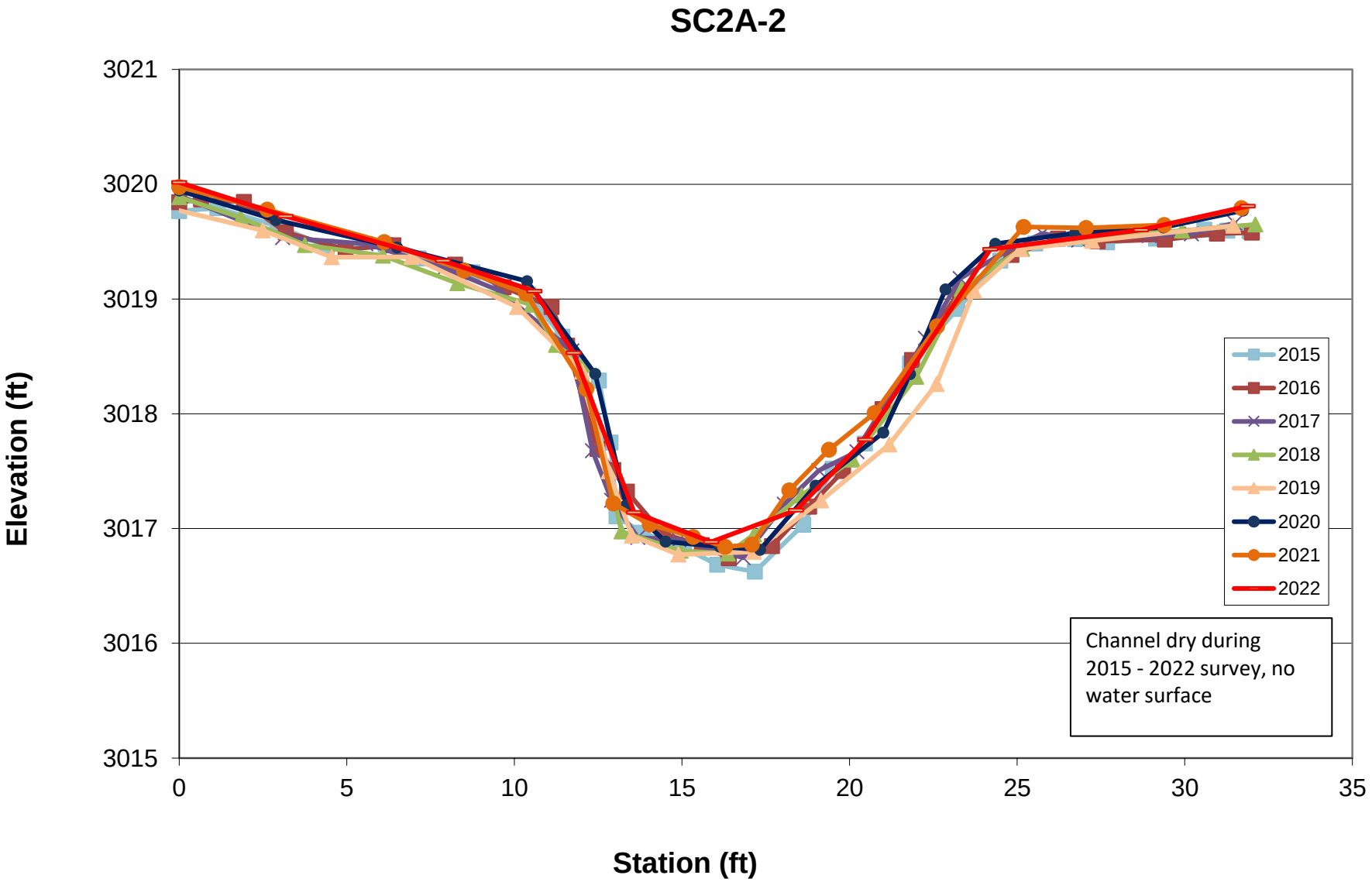
Surveyed Stream Cross Sections

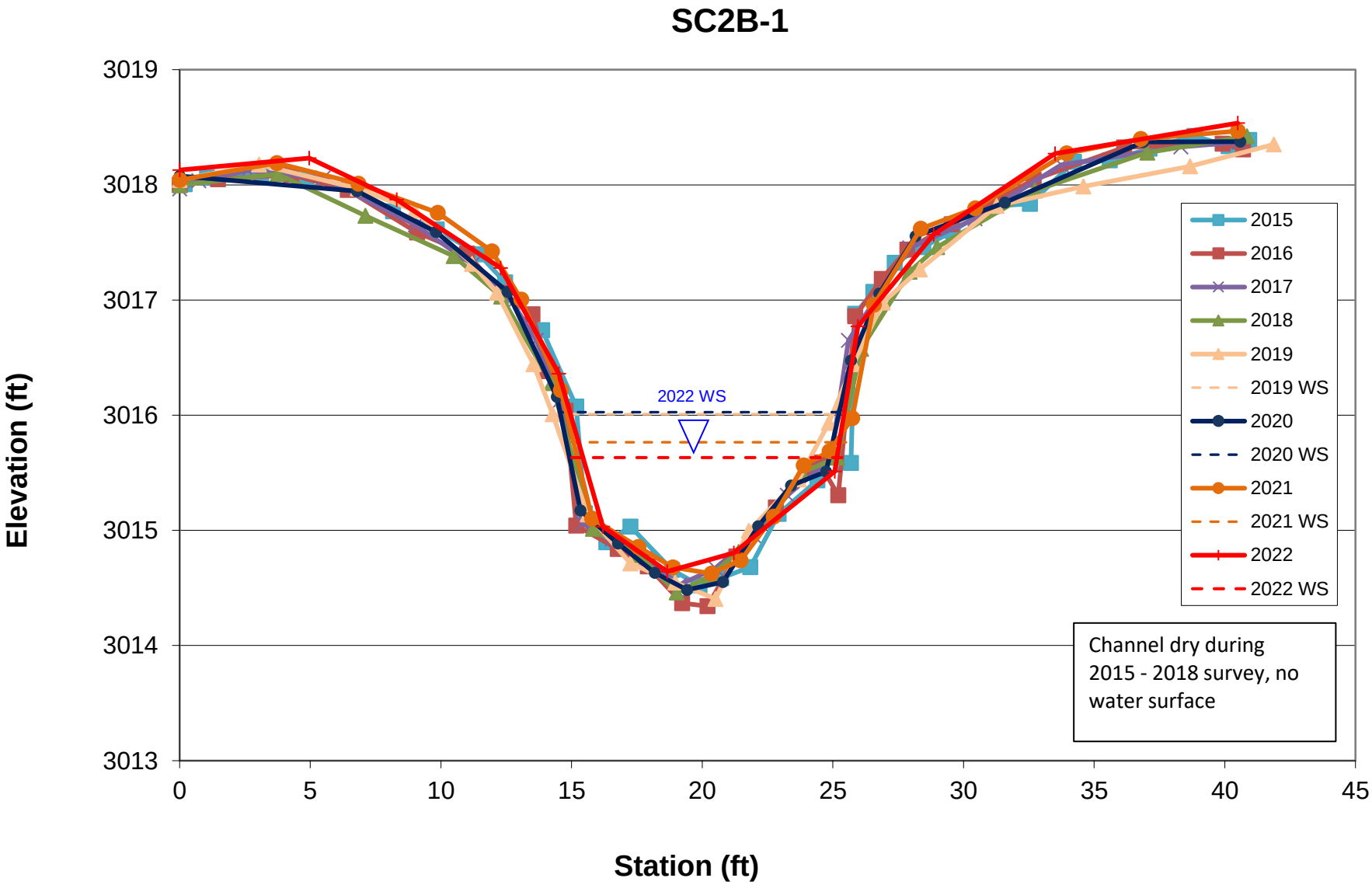
MDT Wetland Mitigation Monitoring
Schrieber Lake
Lincoln County, Montana

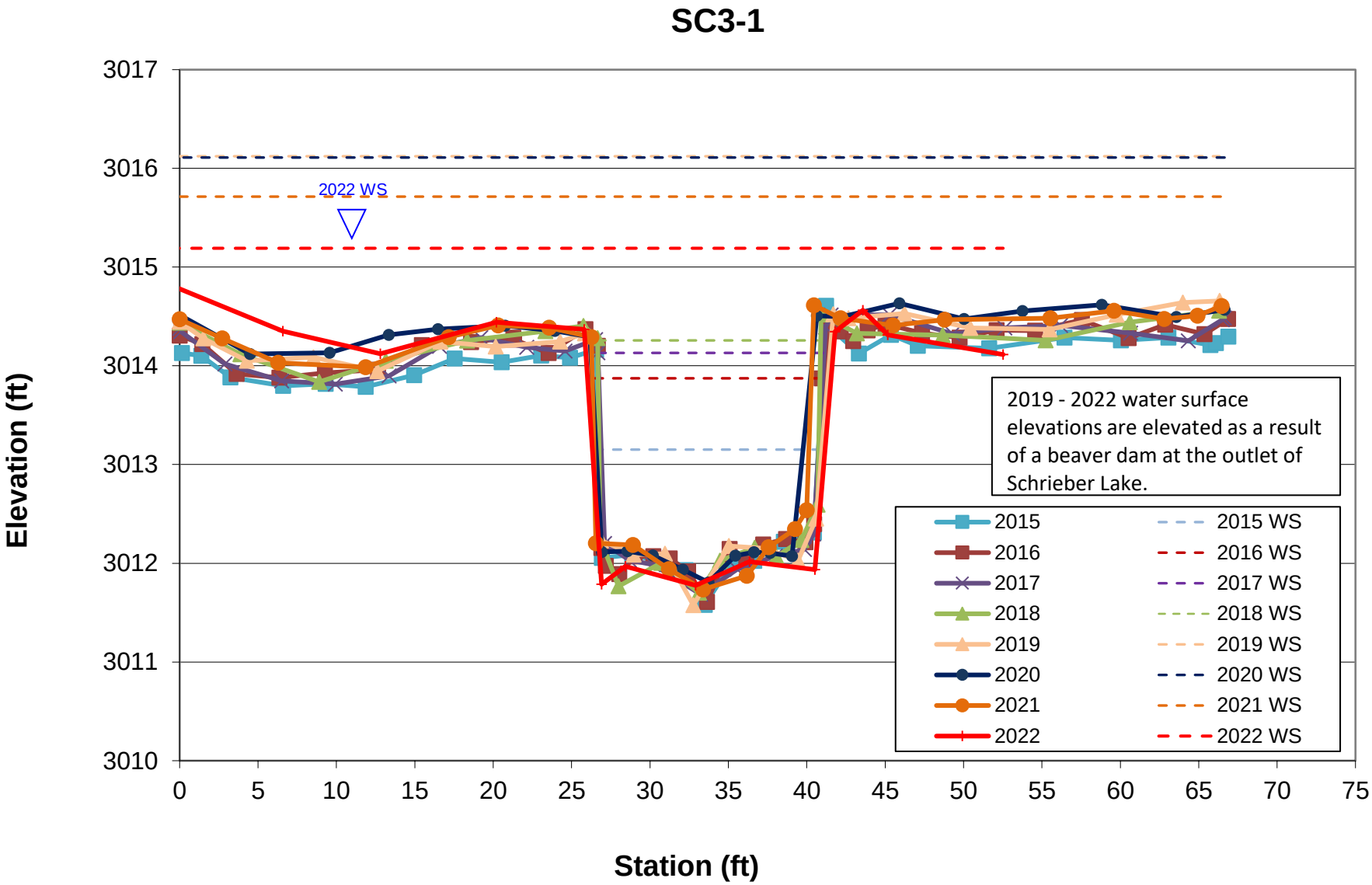

SC1-1
Elevation (ft)
3031
3030
3029
3028
3027
3026
3025
3024
0
5
10
15
20
25
30
35
40
45
50
Station (ft)
2015
2016
2017
2018
2019
2020
2021
2022
Channel dry during 2015 - 2022 survey, no water surface

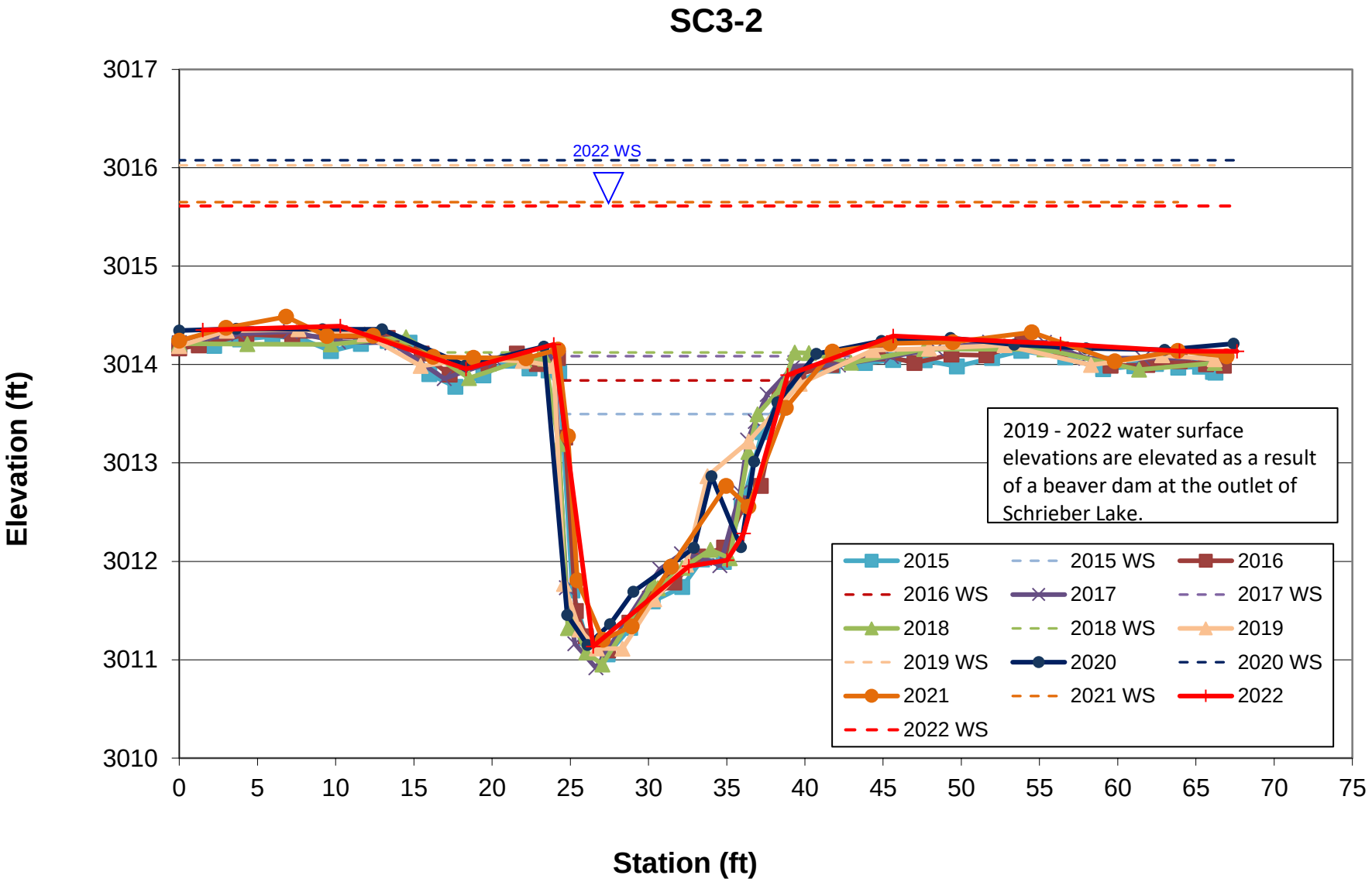

SC1-2
Elevation (ft)
3028
3027
3026
3025
3024
3023
3022
0
5
10
15
20
25
30
35
40
45
50
55
Station (ft)
2015
2016
2017
2018
2019
2020
2021
2022
Channel dry during 2015 - 2022 survey, no water surface

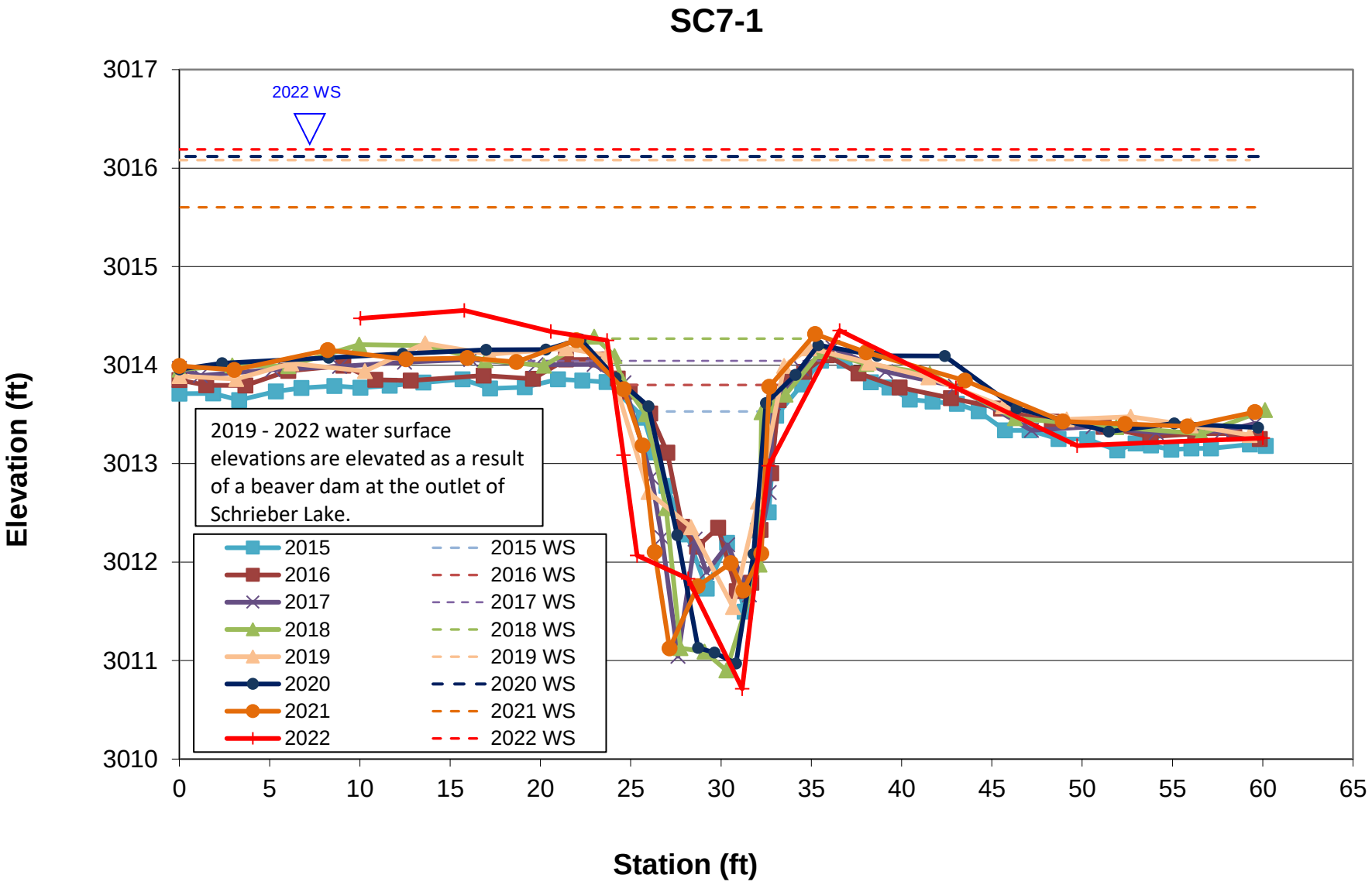

SC2A-1
Elevation (ft)
3023
3022
3021
3020
3019
3018
3017
0
5
10
15
20
25
30
35
Station (ft)
2015
2016
2017
2018
2019
2020
2021
2022
Channel dry during 2015 - 2022 survey, no water surface

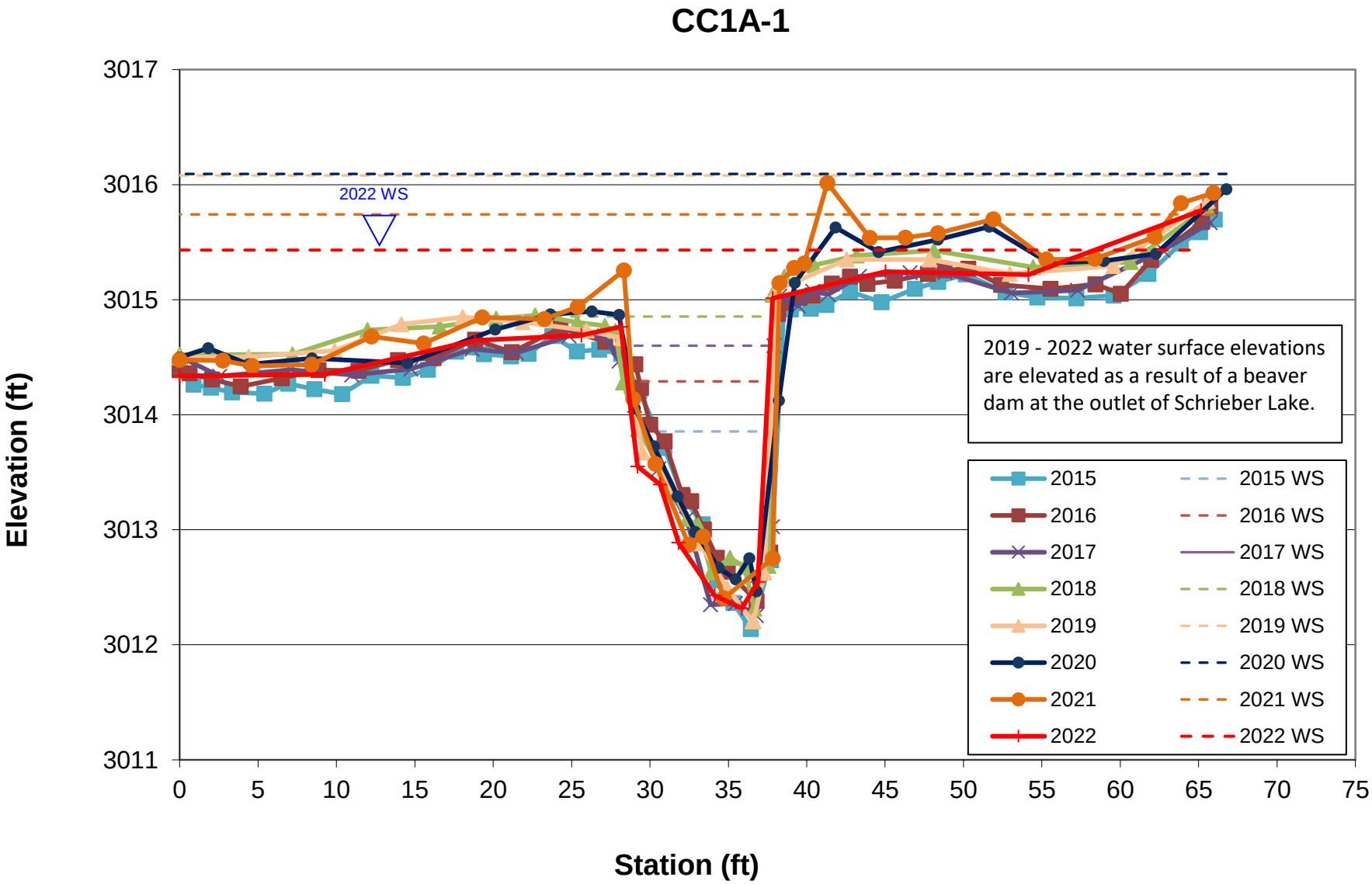

SC2A-2
Elevation (ft)
3021
3020
3019
3018
3017
3016
3015
0
5
10
15
20
25
30
35
Station (ft)
2015
2016
2017
2018
2019
2020
2021
2022
Channel dry during 2015 - 2022 survey, no water surface

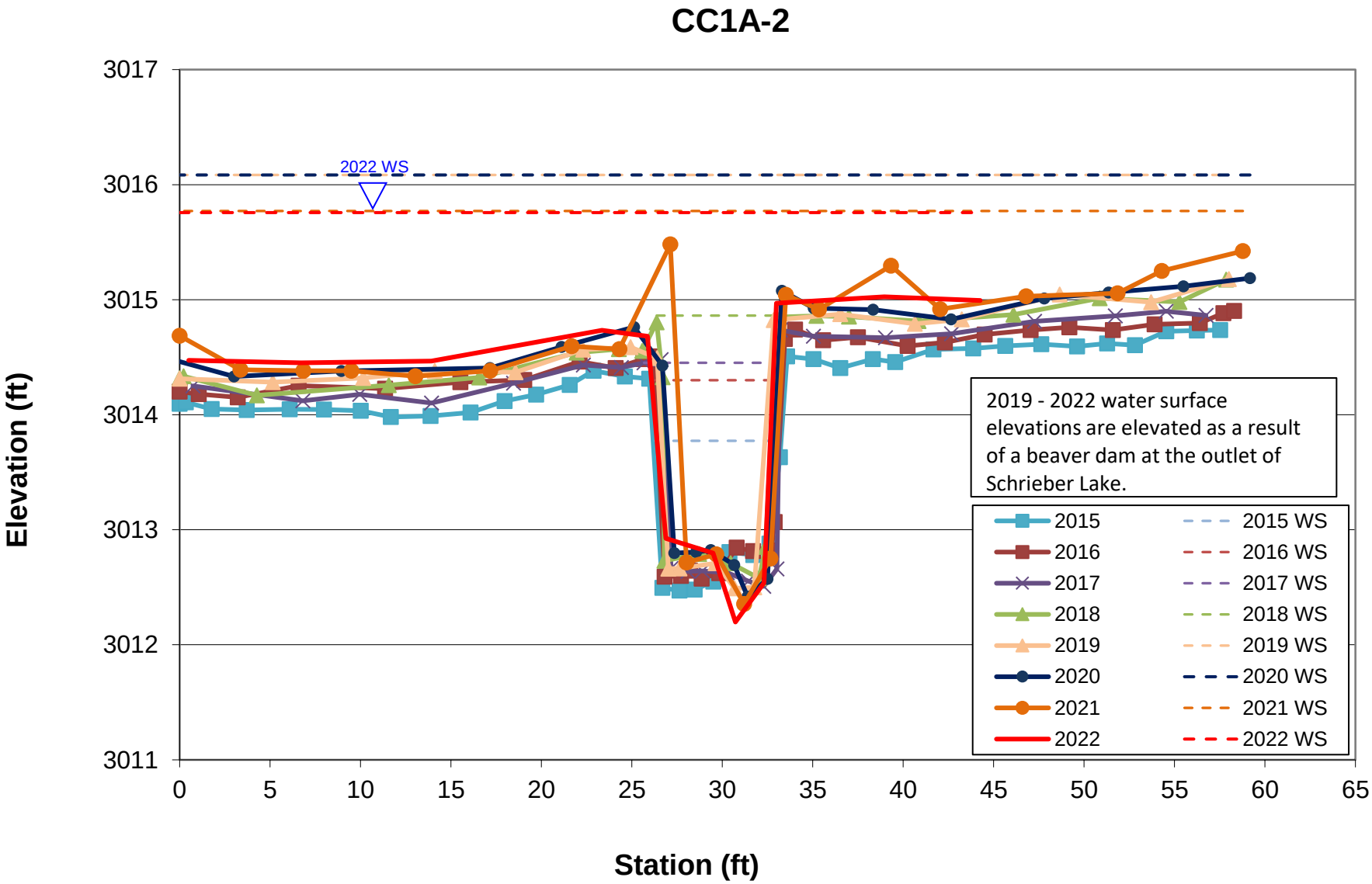

SC2B-1
Elevation (ft)
3019
3018
3017
3016
3015
3014
3013
0
5
10
15
20
25
30
35
40
45
Station (ft)
2022 WS
2015
2016
2017
2018
2019
2019 WS
2020
2020 WS
2021
2021 WS
2022
2022 WS
Channel dry during 2015 - 2018 survey, no water surface

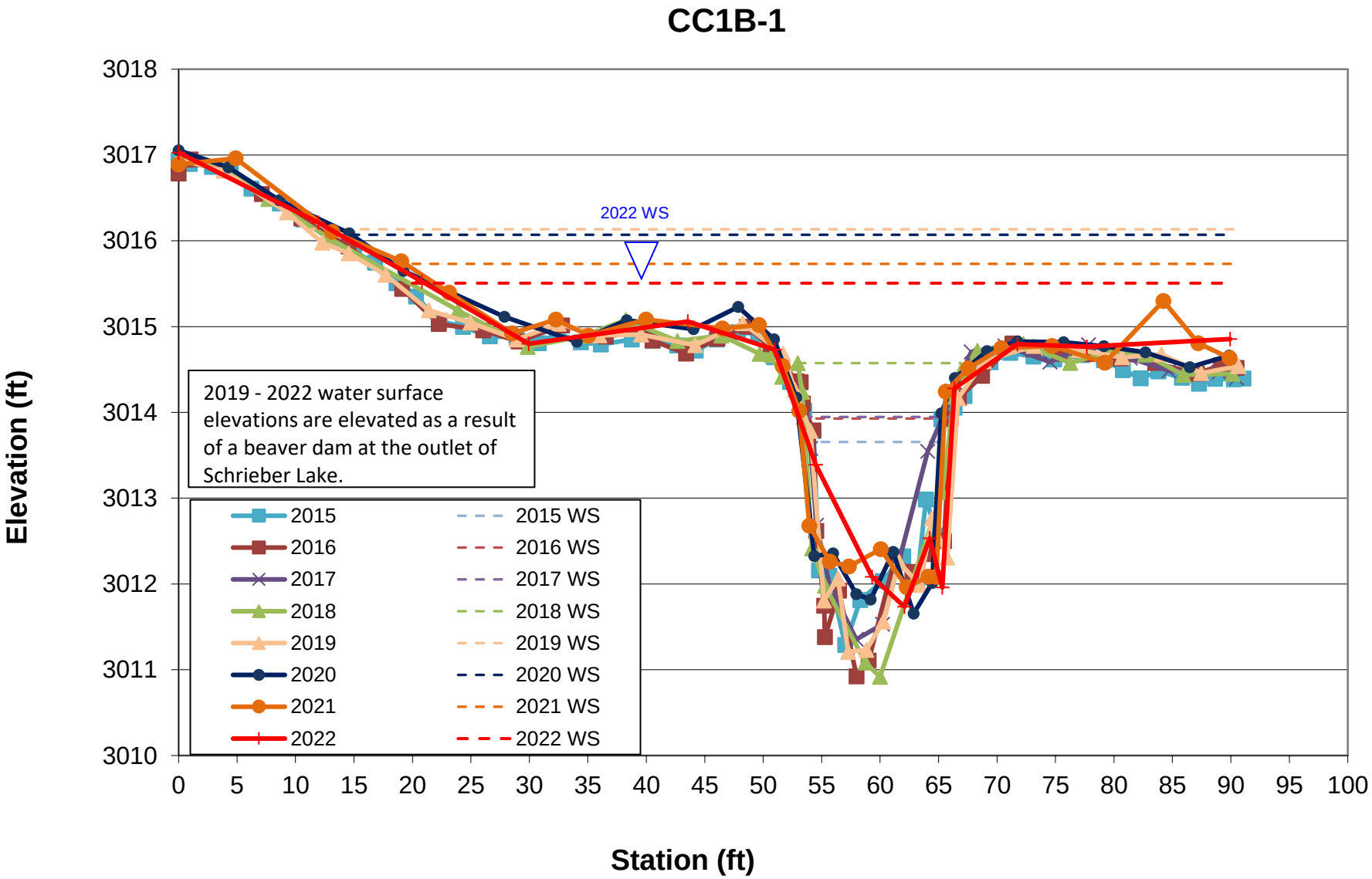

SC3-1
Elevation (ft)
Station (ft)
3017
3016
3015
3014
3013
3012
3011
3010
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
2022 WS
2019 - 2022 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2016
2017
2018
2019
2020
2021
2022
2015 WS
2016 WS
2017 WS
2018 WS
2019 WS
2020 WS
2021 WS
2022 WS


SC3-2
Elevation (ft)
Station (ft)
2022 WS
2019 - 2022 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2015 WS
2016
2016 WS
2017
2017 WS
2018
2018 WS
2019
2019 WS
2020
2020 WS
2021
2021 WS
2022
2022 WS


SC7-1
2022 WS
2019 - 2022 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2016
2017
2018
2019
2020
2021
2022
2015 WS
2016 WS
2017 WS
2018 WS
2019 WS
2020 WS
2021 WS
2022 WS
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


CC1A-1
Elevation (ft)
Station (ft)
2022 WS
2019 - 2022 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2016
2017
2018
2019
2020
2021
2022
2015 WS
2016 WS
2017 WS
2018 WS
2019 WS
2020 WS
2021 WS
2022 WS


CC1A-2
Elevation (ft)
Station (ft)
2022 WS
3017
3016
3015
3014
3013
3012
3011
0
5
10
15
20
25
30
35
40
45
50
55
60
65
2019 - 2022 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2016
2017
2018
2019
2020
2021
2022
2015 WS
2016 WS
2017 WS
2018 WS
2019 WS
2020 WS
2021 WS
2022 WS


CC1B-1
Elevation (ft)
Station (ft)
2022 WS
2019 - 2022 water surface elevations are elevated as a result of a beaver dam at the outlet of Schrieber Lake.
2015
2016
2017
2018
2019
2020
2021
2022
2015 WS
2016 WS
2017 WS
2018 WS
2019 WS
2020 WS
2021 WS
2022 WS
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